

April-May 2017  
Vol. 20, No. 3

*Our 20<sup>th</sup> year of Examining!*

## The Giant Screen Aspect Ratio Dilemma

One of the issues confronting the giant-screen world as it continues the transition to digital is the aspect ratio – essentially, the shape – of the pictures captured for and presented in our theaters. The shape of the 15/70 film frame that established the GS industry is different from that of the digital cinema projectors that are most readily available to replace it. That difference requires some hard choices to be made.

Aspect ratio is the relationship of an image's width to its height. For instance, if a picture is twice as wide as it is tall, its ratio is 2:1. Although ratios are often expressed in whole numbers, it is common to express aspect ratios in relation to the unit (1); thus 4:3 becomes 1.33:1 or more simply, 1.33. The common aspect ratio of modern televisions, 16:9, can also be expressed as 1.78.

Although various film formats used a plethora of aspect ratios in the first three decades of the 20<sup>th</sup> century, by 1932 Edison's original 1.33 ratio for silent 35mm motion pictures was adapted and stand-

ardized to the Academy Ratio of 1.375, to allow room for the soundtrack.

In the 1950s, a slew of new widescreen formats were introduced, including Cinemascope (2.59), Cinemascope (2.55), and Todd-AO (2.29). From that time on, the Academy Ratio was rarely if ever used for theatrical features, although it still was widely used for television programs and made-for-TV movies into the 1990s.

By the late 1960s, with relatively few exceptions, most feature films were released in one of two aspect ratios: "flat" (1.85) and "scope" (2.39). Some theaters ran 5-perf 70mm film, with its native aspect ratio of 2.2, which was often used to show "scope" films. It was in that context that filmmakers **Graeme Ferguson** and **Roman Kroitor** invented the IMAX format in 1967, using 70mm film projected horizontally with a frame 15 perfs wide, and an aspect ratio of 1.43, much closer to the squarer Academy Ratio than the wide-screen cinema formats of the previous two decades.

The Imax founders chose that size and shape for practical as well as esthetic reasons: a primary goal was to unify the multi-image presentations they had pioneered, shot on 35mm and projected with multiple synchronized projectors, into one piece of film that would run on a single projector. They hoped to avoid the complication and frequent breakdowns of the multi-projector systems they had developed for Quebec's **Expo '67** and other special venues. The 15/70 frame could accommodate a three-by-three grid of Academy-Ratio 35mm images or three vertical 5/70 frames. And of course, they also built a camera to shoot full-frame 15/70 images. The first IMAX film, *Tiger Child*, used all

(see **RATIOS** on page 6)

## LED Screens: The End of Projection?

In March, two manufacturers demonstrated direct-view LED screens to theater owners and studios at **CinemaCon**, the annual conference of the **National Association of Theatre Owners**, the trade association of multiplex theater operators.

LED displays have been used for outdoor signage and other high-profile applications for years, but until now have not been considered for use in cinemas. They are capable of extremely high brightness – an order of magnitude higher than the brightest laser projectors – and contrast that is characterized as "near infinite," because black is achieved by literally turning pixels off. Their color gamuts can meet current cinema standards, e.g. Rec. 2020, and 3D is possible with active glasses.

These displays use large arrays of LEDs, each of which forms one pixel. There is therefore a direct relationship between display size, resolution, and pixel size and spacing. Expanding a given resolution to a larger display requires a larger pixel pitch. Conversely, using the same pixel pitch on a larger display results in a panel with higher resolution.

The systems are manufactured as modules that can be seamlessly tiled together

(see **LEDs** on page 2)

### Premiering in April and May

*The Fate of the Furious*  
*Amazon Adventure*  
*Guardians of the Galaxy, Vol. 2*  
*Alien: Covenant*  
*Pirates of the Caribbean: Dead Men Tell No Tales*  
*Aircraft Carrier* (40-min. version)  
See page 14.

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# Could LED Screens Replace Projectors?

(from *LEDs* on page 1)

to create a screen of virtually any size and aspect ratio, and can even be arranged in curved configurations (although not, as yet, curved in two axes to cover a dome).

The extraordinary image quality of these displays far exceeds anything possible with any contemporary projection technology, and their possible adoption by multiplexes signifies a possible sea change that the GS world cannot afford to ignore.

## GDC/Samsung

At CinemaCon, **Man-Nang Chong**, founder and chairman of South Korean digital cinema manufacturer **GDC**, unveiled his company's plans for an LED display system and premium large format (PLF) theater brand that will use **Samsung** technology. GDC will outfit 8K screens of up to 35x68 feet (11x21 meters), using its new JETREEL ultra-PLF brand. Although GDC is a non-exclusive dealer of the Samsung hardware, the company says it has its own intellectual property that makes 8K LED screens possible.

The Samsung system has a pixel pitch of 2.5mm, and luminance of 146 foot-Lamberts, ten times the DCI specification of 14fL. Each display module measures 36x24 inches (90x60 centimeters) and weighs 35 pounds (16 kilograms). They fit together like Lego pieces in a special screen frame, and do not require a cooling system. The system can deliver frame rates of up to 60 fps, and will be 3D capable. GDC claims a lifespan of 100,000 hours.

Eight-K resolution is obviously a vast improvement over the 2K and 4K projection systems installed in commercial multiplex and flat-screen museum theaters, but fully exploiting it will require 8K content. Chong suggested that it's coming, citing the release of *Guardians of the Galaxy, Vol. 2* this spring, which is available in 8K, and at least one Japanese television network that is broadcasting in 8K.

GDC plans to roll out its 8K LED system by the end of 2017. Chong said the company would help finance exhibitor installations, but declined to provide pricing information. He added that 16K resolution will be possible at some point in the not-too-distant future.

One problem with LED screens is that loudspeakers cannot be placed behind the panels, as they are with the thin, perforated-vinyl projection screens. To meet this challenge, Samsung's Audio Lab has collaborated with audio technologists in the Har-

man Professional Solutions' Cinema Group, a recent Samsung acquisition. Speakers designed by Harman will apparently be placed on top of the LED screens.

Demonstrations of a 4K 35-foot (10.7-meter) wide Samsung LED screen were held for invited studio executives and exhibitors at a multiplex theater a few miles from **Caesars Palace**, the CinemaCon host site. The screen used 96 cabinets in a 6x16 array.

## Sony

Sony demonstrated its new LED display system, branded "Crystal LED Integrated Structure" (CLEDIS), using ultrafine LEDs with a 1.2mm pixel pitch that it originally launched in May 2016. CLEDIS was designed primarily for automotive design, corporate board rooms, and the defense industry, and is already being used in those settings. Although Sony reps said the existing system is not yet ready for cinema use, the demonstration at CinemaCon was presumably intended to mark their territory as a future supplier of LED display systems for cinema, and to gather industry feedback.

The 4K demo screen was 9x16 feet (3x5 meters), composed of display modules measuring 18x16 inches (45x40 centimeters), each with a 360x320 array of pixels. Two conventional 2D movie trailers were used in the demo, as well as a clip from **Ang Lee's** *Billy Lynn's Long Half-Time Walk*, which demonstrated the display's 120 fps capability. Luminance was an astounding 292 fL, over 20 times the digital cinema standard. A Sony rep claimed this system has a "half life" of 87,000 hours.

After CinemaCon, Sony's **Todd Best** told *LFX*

## Corrections

In the special report on GS theaters in the February-March issue, we said that the dome theater at the **New Mexico Museum of Space History in Alamo-gordo** was "the world's first dome theater to get laser projection."

**Mark Peterson** of **Loch Ness Productions** reminded us that that is technically not correct. In the first decade of the 21<sup>st</sup> century, a handful of planetariums installed fulldome systems that used laser grating light valve technology. However, the systems were expensive and lacked brightness and were ultimately replaced by conventional digital projectors.

It would have been more accurate to say that Alamo-gordo was the world's first dome theater to use laser-illuminated projectors.



*Sony's 16x9-foot LED display was incredibly bright and sharp.*

that although the current CLEDIS product is not ideal for cinema — the pitch is too small for venues where the average viewer would be 30–40 feet away — the level of interest at the conference was overwhelming. The company is fast-tracking the development of a product specifically for cinema use.

On the matter of the expense of LED displays, Best suggested that the extremely long life and low maintenance of the systems could make them better investments than projectors that have to be replaced every five to ten years. He added that Sony might offer joint-venture deals or long-term leases that would provide theaters with a simple monthly payment, and not require major capital purchases.

### How much?

But the big question still is, how much would a cinema-sized LED display cost, and could it ever be feasible for giant screens? Some manufacturers would not go on the record with pricing at this time, and estimates based on current products may not be appropriate if, as Sony suggests, new systems designed specifically for cinema will be needed. However, we collected data from several manufacturers and experts that can give us some idea of the possible ranges for giant-screen installations.

The **Giant Screen Cinema Association** defines giant screens as having a width of at least 70 feet (21.34 meters). Assuming

that LED displays will have the 1.9:1 aspect ratios of digital cinema, the minimum height of such a display would be 36.8 feet (11.2 meters). A screen with the 1.43 ratio of GS film would be nearly 49 feet (15 meters) tall.

LFX obtained price estimates from three manufacturers of LED displays and one consultant. The prices they gave, when multiplied out to a 1.9-ratio 70-foot screen, ranged between \$2.8 million to \$8 million. (For a 1.43 screen, multiply the numbers by 1.33.)

While these numbers are enough to give any museum CFO a heart attack, keep in mind that they are mostly based on products with finer pixel pitches than needed in theaters. Paradoxically, the displays that would be best for GS theaters are at the low end of that range, not the high end.

According to NEC's **Grant Wylie**, the rule of thumb for pixel pitch is that the closest viewer must be at least 8.2 feet (2.5 meters) away for each millimeter of pitch to ensure that pixels are not visible. Standard IMAX and giant-screen theater design calls for the first row to be no less the 0.3 times the screen width from the screen. In a 70-foot theater, this would mean a pixel pitch of about 2.6mm. The \$2.8 million option cited above was for a 3.1mm, and therefore a little less expensive than a 2.6mm display, which might fall in the neighborhood of \$4.5 million.

Obviously, this is much more than the

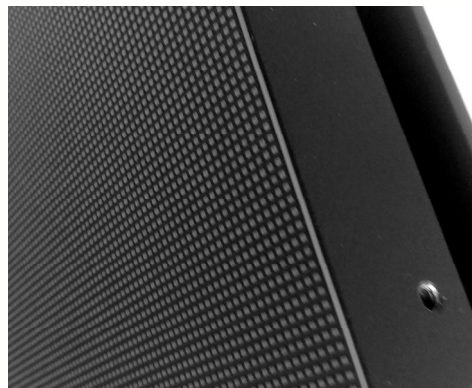
most expensive laser projection systems available today. But the performance is also vastly superior to any existing projection system, and as with all things electronic, prices can be expected to fall. Furthermore, as mentioned above, leases or other financing options, combined with a long product life and extremely low maintenance and operational costs, could make the total cost of ownership competitive with projection systems, particularly in relation to the superior performance.

However, LED screens will not save money on theaters' electrical bills. All that additional light takes power. NEC's Wylie says that the panels draw about 700 watts per meter when displaying an all-white screen at full brightness. That's about 167 kW for a GS-sized screen, about 15 times more than the full rated draw for a pair of 6P RGB laser projectors. Of course, that's a worst-case scenario: most real-world content requires about one tenth that much light on average.

Multiplex operators considering these systems are expected to promote them as ultra-premium experiences that will command higher ticket prices. There is no reason institutional theaters could not do so as well.

Although it may be many years before a giant-screen theater is equipped with an LED display screen, high-end PLFs in multiplexes could have them within a year or two, and their potential for enhancing the GS experience should not be disregarded.

*Paul Fraser, of Blaze Cineworks, contributed to this report.*



*The surface-mounted LEDs on Samsung's 36x24-inch module are 2.5 mm apart.*



# THE BIZ

## NEWS

### Imax Q1 results

On April 20, **Imax Corporation** reported its financial results for the quarter ending March 31, 2017. The company posted a profit of \$75,000 (nil per share) on revenues of \$68.7 million. This compares to a profit of \$11.3 million (\$0.16 per share) on revenues of \$92.1 million in the first quarter of 2016. The company signed deals for 38 new theaters in the quarter, and installed 14, ending the quarter with a backlog of 524 theater systems yet to be installed. As of the end of the quarter, there were 1,121 multiplex IMAX theaters, 91 institutional theaters, and 14 destination theaters, for a total of 1,226.

Imax took a write-down of \$3.4 million to its documentary film fund, based on the poor performance of **Terence Malick's** *Voyage of Time*. According to The-Numbers.com, the film grossed only \$81,391 in its brief run in about 15 IMAX theaters last fall, although this figure may not be up to date.

Imax CEO **Richard Gelfond** reported that the IMAX VR center in Los Angeles had received more than 20,000 visitors since its opening in January, grossing about \$15,000 a week. He said additional pilot sites will open in New York (in May or June), Shanghai, Tokyo, and Manchester, UK, to test and refine the products and procedures.

Imax stock, trading at \$32.20 the day before the announcement, fell by nearly 6% in the weeks that followed. At press time it was trading at \$30.38.

### GSCA fall conference update

The **Giant Screen Cinema Association** will hold a one-day marketing symposium following its annual conference and trade

show in Chicago this fall. Registration for both has opened, and film submissions and award nominations are also now open. The conference will be held Sept. 26–29, with the marketing symposium on the 29<sup>th</sup>.

The symposium is intended to help theaters “increase their capture rates, grow overall attendance, and re-energize the giant-screen market with ideas from a fresh perspective,” according to a press release. The GSCA has partnered with

tion’s Web site.

Film screenings in Chicago will be held at the **Navy Pier IMAX Theatre**, a 445-seat theater with an IMAX laser system and a 62x85-foot (19x26-meter) screen, and in the giant-dome theater of the **Museum of Science and Industry**, a 76-foot (23-meter) dome that will be equipped with a new **D3D/Christie** laser dome system by the end of May.

### CSC to get IMAX laser

The **California Science Center** in Los



*The IMAX theater at the California Science Center in Los Angeles.*

Angeles will replace its 19-year-old IMAX 3D GT film system with the IMAX laser system this fall, closing on Sept. 4 for an undetermined period. According to CSC’s vice president, **Joe Amicis**, the carpeting in the 420-seat auditorium will also be replaced and the bathrooms refurbished during the closure.

It is the 41<sup>st</sup> IMAX laser system to be announced, and when it opens it will be the 14<sup>th</sup> institutional IMAX laser theater.

In 1984, the California Museum of Science and Industry (as it was then

known) opened its first (2D) IMAX theater in a building near the museum’s Frank Gehry-designed Aerospace Hall. The original IMAX, whose screen was screen was 53x70 feet (16x21 meters), was demolished before the new museum building and IMAX theater opened in 1996. The new theater’s screen is 67x90 feet (20x27 meters).

agency Museum Playbook to develop the symposium. The symposium is included in conference registration; those wishing to attend only the symposium can obtain a one-day admission.

Conference registration and schedule details are available at giantscreencinema.com. Early registration at a reduced rate ends on July 28.

Submissions for new films, films in production, and projects in development are due by June 2. Nominations for the GSCA Film Awards are also due on June 2. Marketing and Education Award entries are due on June 14. Eligibility requirements are available at the associa-

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### USS Lexington gets laser system

In April the **USS Lexington Museum** in Corpus Christi, TX, upgraded its **Joe Jessel 3D Mega Theater** with a **Barco** six-primary RGB laser system and **Dolby** cinema server, supplied and installed by **D3D Cine-**

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# THE BIZ

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## NEWS

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**ma.** The new projectors replace a Barco 4K xenon system D3D installed in 2012. The new system uses the previous sound system and was installed in only three days.

The WWII-era *Essex*-class aircraft carrier was decommissioned in 1991, and a year later was opened as a museum. In 2001, a 193-seat theater was installed in the forward aircraft elevator space with a MEGAsystems 8/70 film projector and a 30x40-foot (9x12-meter) screen.

### Imax theater deals

In March and April, **Imax Corporation** signed four deals for a total of 71 new IMAX theaters in Europe, the Middle East, China, and India.

In China, the **Omnijoi** chain has agreed to open 40 new IMAX screens by 2021, which will bring its total to 72. The state-owned exhibitor currently has 1,254 screens, 16 of which are IMAX, in 212 locations.

**Odeon Cinemas Group** has announced that it will open 25 IMAX theaters throughout Europe, including in the U.K., Germany, Spain, and Italy, bringing its total commitment to 47. The chain, a subsidiary of **AMC**, which is in turn owned by China's **Wanda Cinema Group**, now operates 19 IMAX screens.

**PVR Ltd.**, the largest exhibitor in India, has signed a deal for five more IMAX theaters, doubling the total it has agreed to open on the subcontinent, four of which are already in operation. The chain has 126 multiplexes with a total of 579 screens.

And **Vox Cinemas** will open three more IMAX theaters in Bahrain and the United Arab Emirates, bringing its IMAX total to seven. One of the new theaters will get the IMAX laser system.

### Imax, Warner VR content deal

In March, **Imax Corporation** and **Warner Bros. Home Entertainment** said they would co-finance and produce three VR experiences based on coming Warner films, including *Justice League*, *Aquaman*, and a third title to be announced. They will be released one a year, with *Justice League* expected in late 2017. All will have an exclusive window in IMAX VR centers before being released to other platforms, including in-home and mobile.

The first IMAX VR location opened in

The first experience being offered is "Spacewalk: Danger in Orbit," which lets visitors become an astronaut "testing a new manned-manuevering unit as they explore the elaborate exterior of the International Space Station," according to a press release. Tickets for the experience are \$12.

### Boston IMAX in zoning spat

The **Simons IMAX Theatre** is involved in a battle between Boston's **New England Aquarium** and developer **Don Chiofaro**, who plans to build a 600-foot skyscraper near the downtown waterfront site.

The aquarium is concerned that construction of the billion-dollar project would significantly reduce its attendance, and wants the developer to agree to cover any financial losses it experiences during the three years (or more) it will take to build. It also wants visitor parking in the new building, which would replace an existing parking lot. Until it has such guarantees, the aquarium is opposing the zoning changes that would allow the project to move forward. Negotiations are continuing.

The IMAX theater, which is in a separate, metal-clad building immediately adjacent to the proposed tower, would block water views for some tenants of the tower, and the site could be useful to the developer for staging during the construction phase. But the aquarium insists that Chiofaro would have to purchase the theater at market rates, enabling the aquarium to build a new theater in a reconfigured aquarium complex. Such an eventuality is years away, according to an aquarium spokesperson.

The 16-year-old IMAX theater, which is operated under a management contract by **Imax Corporation**, has 392-seats and a 65x81-foot (20x25-meter) screen.



*The Simons IMAX Theatre at Boston's New England Aquarium.*

Los Angeles in January, and five more pilot sites are planned for New York, U.K., and China in the next few months.

### NASM installs VR system

The **Smithsonian's National Air and Space Museum** in has installed a motion-based virtual reality system in its flagship museum in downtown Washington, DC. **Pulseworks, LLC**, partnered with the museum to install the Pulseworks VR Transporter, a four-person motion platform with three degrees of freedom. Combined with head-mounted displays, the system also includes surround sound and 4D effects.

# The Dilemma of GS Aspect Ratios



The first IMAX film, *Tiger Child* (1970), used multi-image panels.

(from **RATIOS** on page 1)

three configurations, although full-frame 15/70 soon became the norm as multi-image films fell out of fashion.

As Ferguson recalls, the first few films used every inch of the tall frame, but after 1976 using the full height of the screen was not as feasible as it had been originally. (See box on page 7.)

The giant screens of IMAX theaters established a new immersive cinema experience, no small part of which was the impressive height of the screens, which averaged 60 feet (18.3 meters) and eventually reached heights as great as 96.5 feet (29.4 meters). The “wow” factor of simply

entering a theater whose screen was six stories (or more) tall made it clear that this was not going to be an ordinary movie, even before the first frame of film was projected.

However, in the 1980s and 1990s televisions and computer screens followed the trend toward wide formats that movie theaters had already adopted.

High-definition television (HDTV), codified in digital form in the mid-1990s, used a ratio of 16:9 (1.78), which was chosen as a compromise between analog TV’s 1.33 and the wide-screen cinema formats. Material originated on the former would be framed by black bars on the sides of the HDTV screen (pillarboxed); the widest “scope” formats would have black at the top and bottom (letterboxed).

With the introduction of digital cinema projection, standardized by the **Digital Cinema Initiatives** (DCI) specification in 2005, a new aspect ratio arrived: 1.9, the ratio of 2K (2048x1080) images, and very close to the 1.85 “flat” ratio for movies. It

is the native ratio of virtually all digital cinema projectors, including 4K units, which double the pixel count of 2K on both axes. As is the case with HDTV, content with wider or narrower aspect ratios is projected letterboxed or pillarboxed, respectively.

## GS aspect ratios

Today, giant screens are virtually the only place to see 1.43 motion pictures presented theatrically. Some 110 non-multiplex GS theaters do so with 70mm film, either 8-perf, 10-perf, or 15-perf. Another 15 have the IMAX digital laser system, and as of this writing, one has the **D3D/Christie** laser dome system. These two are the only digital projection systems currently available for GS theaters that are capable of projecting a full-screen 1.43 image.

(Illinois’ **Peoria Riverfront Museum** has a projection system installed in 2012 by **Global Immersion** that was designed to present a 1.43 image, but its proprietary file format was impractical and the theater stopped using it a few years ago.)

But almost 90 former GS film theaters



Above, l to r: 1.43 image (15/70 film, IMAX laser), 1.9 image (digital cinema), 2.39 image (“scope”).  
Below left: pillarboxed 1.43 image in 2.39 frame. Below right: letterboxed 2.39 image in 1.43 frame.





— more than 40% of all GS screens — have converted to digital cinema projectors with the native 1.9 ratio, and more are converting every day. In doing so, they have given up the tall 1.43 aspect ratio that has been one of the chief distinguishing characteristics of giant-screen cinema for nearly 50 years.

This has long been a concern for many in the GS community who believe that GS theaters need to differentiate themselves from conventional movie theaters, and feel that aspect ratio, along with screen size, image quality, and other factors, is an

important way to do so. They worry that as the IMAX brand becomes more closely wedded in the public's perception with Hollywood features, and as the screens of IMAX and other premium large format theaters get larger and larger, screen size alone will not be an adequate distinguishing characteristic.

Indeed, aspect ratio was part of the discussion of the 2010 colloquium, in Marblehead, MA, organized by **John Jacobsen** of **White Oak Associates**, that launched the **Digital Immersive Giant Screen Specifications** (DIGSS) process. Jacobsen, and

others at the meeting, felt quite strongly that the tall aspect ratio was a vital component of the giant-screen experience. He has not changed that view, and outlines it in an essay on page 9.

The DIGSS process faced a challenge that had not existed for DCI, its earlier counterpart in the conventional cinema world, which standardized the digital cinema hardware and software used by Hollywood studios and multiplex theaters. Although a handful of non-standardized digital systems were tested before 2005, for

(see **RATIOS** on page 8)

## How the Smithsonian Changed GS Aspect Ratios

In a phone interview for this article, **Imax Corporation** co-founder **Graeme Ferguson** provided us with a unique historical perspective on the question of aspect ratio. He explained that the first five permanent IMAX theaters were all built specifically for the purpose, and embodied the features that would become standard for the brand: a giant screen with a 1.43 ratio (if flat) and steeply raked seating that put all viewers within one screen-width of the screen.

However, IMAX theater #6, at the **Smithsonian's National Air and Space Museum** in Washington, DC, was different. Because it had to be fitted into a space that had been designed before it was known that it would be an IMAX theater, many compromises had to be made in its construction, including the screen dimensions. When it opened on July 4, 1976, the screen was (and still is) 46 feet tall and 75.5 feet wide (14x23 meters), for an aspect ratio of 1.64. All 15/70 films shown there are cropped at the port glass by about 10% top and bottom.

As fate would have it, the museum's extraordinary popularity, and its signature film, *To FLY!*, produced by **MacGillivray Freeman Films**, soon made it the most popular IMAX theater in the world. As such, it was largely responsible for the growth of IMAX theaters in museums around the world, which in turn made IMAX and GS theaters synonymous with science-oriented, short-form documentaries.

In making films for the first five permanent IMAX theaters, Ferguson and co-founder **Roman Kroitor** often made use of the full height of the 15/70 frame, and urged their fellow IMAX filmmakers to do so as well. Many of the 15 IMAX films made between 1970 and 1976 placed objects at the very top of the frame, which also allowed them to take advantage of the IMAX sound system's top screen speaker.

NASM's shorter screen changed all that. Now filmmakers who wanted their films booked at the world's most popular IMAX theater (i.e., all of them) had to leave "safe areas" top and bottom, so that important objects wouldn't be cut off by NASM's screen. IMAX cameras were fitted with viewfinders that included lines that indicated the NASM safe area.

According to Ferguson, this fact changed most, if not all, films shot from that point on. "What is outside [the NASM safe area], because it's optional, becomes less important; to the camera person, to the director, and

editor. Filmmakers, including me, [had] to think totally differently from the way Roman and I had initially, when we were *trying* to put interesting things up at the top of the frame."

The only films that didn't have this limitation were those made specially for world's fairs, theme parks, or destinations, which weren't expected to be booked elsewhere. They could use the full 15/70 frame, and according to Ferguson, some did. But as the industry grew, such films became increasingly rare.

In this way, the most popular IMAX theater in the world effectively reduced the aspect ratio of nearly all GS films made for the last 40 years.



*Graeme Ferguson filming Space Shuttle launch in the 1980s.*



*In late 2014, Moody Gardens installed a Christie 4K laser system.*

(from **RATIOS** on page 7)

the most part the studios and multiplexes waited for the DCI spec before making the transition to digital. Within a few years, virtually all of the world's 130,000 cinema screens were digital.

The giant-screen world was never larger than a few hundred theaters, and the DIGSS proponents had no means to impose a standard on those theaters, nor could they expect any manufacturer to develop a new digital projector from scratch for such a small market. It was always clear that the GS world would have to rely on technology intended primarily for conventional theaters. Ultimately, of course, Imax did introduce a laser system, based on the DCI spec, with the tall ratio of its original film system. But by the time it did, many GS theaters had already dropped film for DCI-compatible digital projectors.

### What the research shows

The aspect ratio problem has continued to be an area of concern for the **Giant Screen Cinema Association's** Technical Committee and DIGSS Task Force. (*Full disclosure: the editor of LF Examiner is a member of both.*) The committee has discussed the possibility of conducting research to determine the effects that various aspects of the GS experience – including aspect ratio – have on audiences, although no such studies have yet been done by the GSCA.

However, in the course of reporting this article, *LF Examiner* discovered that another organization has. **Moody Gardens**, in Galveston, TX, was among the first GS theaters to convert to digital projection, and after an early experiment that judged that 2K projection was unacceptable as a replacement for 15/70, it installed 4K projectors in late 2010.

According to **Andy Wood** of D3D Cinema, which installed the systems and helped with the test, Moody was concerned about the change in aspect ratio, and set up screenings and surveyed audiences to learn what impact aspect ratio had. Over a period of weeks, screenings of four films, some in the native 1.9 digital aspect ratio, others filling the theater's 1.43 screen, were held. (The films were *The Last Reef 3D*, *Wild Ocean 3D*, *Dinosaurs Alive 3D*, and *Tornado Alley 3D*.) Designed to isolate aspect ratio as the only variable that changed, the full-screen shows used pillar-boxed DCPs along with lenses that filled the full height of the screen. The black pillarboxes, which would have otherwise been projected onto the side walls of the theater, were masked at the port glass. The fact that some pixels were therefore “thrown away” means that the horizontal resolution of the full-screen presentations was slightly lower than the 1.9 screenings, the only other difference besides aspect ratio.

About 500 people were surveyed for each ratio. Viewers only saw one ratio; no

one saw presentations in both ratios. They were asked two questions:

1. Independent of the actual movie content, how would you rate the technical presentation at this giant screen theater (image quality, audio quality, 3D quality, etc.)?
2. How would you rate your overall experience seeing a movie at this theater?

The responses were virtually identical for both types of presentation:

	1.43	1.9
Q1	<b>82.1%</b>	<b>81.1%</b>
Q2	<b>79.4%</b>	<b>83.0%</b>
Average score on a 100-point scale.		

Note that, although it may not be statistically significant, for Q2, a small percentage *preferred* the 1.9 digital presentation.

This strongly suggests that, absent a side-by-side comparison, audiences do not have a strong preference for either aspect ratio.

### Digital theaters' experience

This seems to be supported by the anecdotal experiences of some theaters that have switched to digital. **Charlotte Brohi** at Texas' **Houston Museum of Natural Science** and **Tony Hardy** at the **Pink Palace** in Memphis, TN, told *LFX* that after switching they received no comments or complaints from visitors about the change in aspect ratio. **Rodney Daniels**, at the **Entergy Giant Screen Theater** in New Orleans, says that they even heard from some visitors who thought the new screen was *larger* than the old, taller one.

For almost two years, Canada's **Victoria IMAX Theater** used both an IMAX film projector and the first-gen IMAX digital system, the former mostly for daytime screenings of documentaries, the latter mainly for Hollywood features (all of which are released in a wide ratio). However, sometimes they ran nature films on the IMAX digital system, which has a 1.9 ratio. Manager **Paul Wild** says, “We did have a few queries about the shorter digital image, but no real complaints *per se*.”

(see **RATIOS** on page 10)



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# The 1.9 Guppy

by John Jacobsen

The museum giant-screen experience has lost its vitality. Annual attendance and lease payments are down from the halcyon years – the Eighties, Nineties, and even into the Aughts.

When she was developing the **Science Center of Iowa**, Mary Sellers told me she was less worried about big dangers than about being eaten alive by guppies – no single guppy bite is too painful or deadly, and sometimes the change is hardly perceived. Cumulatively, however, the guppies steal vitality and lead to failure.

The shift to the 1.9 digital aspect ratio is but one of the guppies responsible for the decline of giant-screen theaters. Other guppy bites include the end of the novelty; the decline of money flowing through the box office back to museums and film investors; the confusion among the IMAX and other GS brands and venues; the proliferation of GS theaters; commercial competition; the advent of multi-platform productions that do not maximize the 1.43 GS experience; the erosion of participation by museum directors in the **Giant Screen Cinema Association**; the decline in format innovation; the delays in the introduction of **Imax Corporation's** digital dome system; the erosion of the relationship between museums and Imax Corp. since the departure of the Imax founders in the 1990s; the arrival of television documentary channels; and on and on.

Museums pride themselves on museum-quality experiential learning, offering visitors opportunities to learn from experience. Within a given screen width and in a DIGSS-compliant seating layout, 1.43 projection is a third taller and more immersive than a 1.9 screen. This larger field of view fills more of the peripheral vision, which, by definition, is not as noticed as the central vision. This sensory immersion

gives a museum an experiential learning medium to place their audiences inside environments, journeys, and simulations.

A 1.43 museum theater offers a unique experience that can claim to be the biggest, latest, and best screen in the city, i.e., “museum-quality.” On the other hand, 1.9 digital theaters in museums are not appre-

formats were on the rise. But since the turn of the new millennium, new digital full-dome projection and production technologies have helped bring them back into vogue. Maybe there is similar hope in the long term for GS theater spaces in museums, but crowd-generating success is likely to come from a spatial, experiential, and immersive format – not one that duplicates every other theater in town. The taller 1.43 screen heights and theater geometries create immersive audience experiences that are unique to museums and aligned to their commitment to experiential learning.

The museum giant-screen field did not desire smaller screens. Many of us tried hard to keep the 1.43 aspect ratio alive. However, shorter 1.9 systems won over weary, cost-cutting managers one by one, because 1.9 is cheaper, smaller, generic, conventional, and pervasive. While these are not qualities associated with museums, 1.9 became the path of least resistance inside a downward spiral already swarming with other guppies.

I hope that 1.43 screens are preserved and that the dome theaters' need for 1.43 eventually also

drives reasonable solutions for flat screens. But I also hope for completely new approaches to using experiential media in the architectural shells of the two hundred immersive GS theaters in museums. In that effort, 1.43 is on the right side of history.

*John Jacobsen is president of White Oak Associates, Inc., an international museum analysis and planning firm. In 2010, as the principal investigator of the NSF-funded DISCUSS Colloquium of GS industry leaders and experts, he launched the Digital Immersive Giant Screen Specifications (DIGSS) process. He can be reached at [jjacobsen@whiteoakassoc.com](mailto:jjacobsen@whiteoakassoc.com).*

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White Oak Associates' John Jacobsen in 2010.

ciably different from the many other 1.9 digital theaters, and their squatter screens are less immersive and experiential, and more framed than 1.43 screens.

The GS field is stuck with 1.9 not because it wanted 1.9 – in 2010, the DISCUSS Colloquium recommended 1.43 for DIGSS 1.0 – but because 1.43 was difficult to do reliably and well. Many have accepted the guppy bite and settled for less. By the time 1.43 digital systems were technically feasible, there was not enough money flowing in the system to sustain them and a film library that used the ratio experientially. Remember Imax's slogan “Size Matters”? I believe it does, but apparently, we can't have it anymore.

Planetariums went through their dark ages in the 1970s and '80s, as GS film

(from **RATIOS** page 8)

Some theaters install a smaller screen when they switch, others mask the existing screen, and some don't even do that: they simply leave the tall screen in place and project an image that doesn't fill it, top to bottom. D3D's **Derek Threinen** explains, "When the lights go out, it all disappears."

Threinen tells *LFX* that, having installed a couple dozen digital systems, he has not heard of any audience complaints regarding aspect ratio, calling it "an absolute non-issue." Co-founder **Don Kempf** points out that D3D's institutional clients are very "mindful of visitor complaints," so he is sure he would have heard if there had been any.



*D3D Cinema's Don Kempf.*

Kempf says that the "transition to digital offers exhibitors incredible opportunities to improve their economics," but regarding the DIGSS effort to establish uniform specifications for GS presentations, he worries that standards proposed by "well-meaning purists" could "thwart those benefits." He feels that although standards for image quality are important, theaters planning to switch should not consider aspect ratio as a major issue.

### Filmmakers' views

Filmmakers we heard from had a different take, for the most part strongly supporting the taller aspect ratio. This is partly because economics generally require them to distribute their films to dome

theaters, for which the 1.43 ratio is more important. Since they have to make a 1.43 version, they'd rather see more theaters project it that way, because it is the "uncut" version.

**Jonathan Barker** of **SK Films** has just released *Amazon Adventure*. As with his previous film, *Flight of the Butterflies*, the production team went to great lengths to preserve the 1.43 ratio for dome and flat-screen theaters. This included creating shot extensions that expanded the vertical dimension of footage shot at the wide digital ratio.

Barker believes that "one of the biggest dangers we face as an industry is turning into large televisions." Digital production technology "lowers the bar for entry," making it possible for anyone to put content on giant screens. "If there's going to be content that's made for this experience, we have to do everything possible to differentiate it from what people can get anywhere." Barker fears that the temptation to put the cheapest available programming on screen will lead to less money being available for high-quality productions. Aspect ratio "is a small thing, but a very important thing."

Asked what advice he would give to theaters who might not be able to afford the IMAX laser system, Barker said, "I'd rather have you be 16:9 than closed, but I would urge you to make every effort to preserve the most immersive experience and take a longer-term view," adding that "it would be nice if there were other options" for digital 1.43 projection.

Cinematographer **James Neihouse's** 32 giant-screen credits over 40 years include all eight of the IMAX space films as well as *NASCAR* and *Pulse: A STOMP Odyssey*. "We spend a lot of time on those frames, and to crop it and crop it, you've just thrown away a third of my work. Have some respect for the filmmaker." Like Barker, he is concerned about differentiating GS from conventional cinema and even home theaters. "You have to be better, different, more immersive, to draw the audience in. You are now competing with home theaters that have great sound systems, big screens, 4K, and HDR [high dynamic range]."

**Pascal Vuong**, producer and director of

*D-Day: Normandy 1944*, is somewhat more sanguine about the need for filmmakers to shoot for both wide and tall aspect ratios, but he points out that "serving those two different worlds represents drastic additional costs for producers: at the shoot, in post-production, lab, etc."

### Another view

Although **Mike Lutz** is Imax's vice president for institutional sales in the Americas, he made a point at the start of our conversation that he was expressing his personal opinion, and not necessarily the official position of Imax Corporation. (The official position is that all IMAX projection systems — film, digital, and laser — provide "the IMAX Experience.")

Lutz started out by quoting an article that he said he always carries in his briefcase, to show clients if the need arises: *Still Killing the Giant Screen*, an editorial that appeared in this publication in the spring of 2014. We wrote, "What separates the giant-screen experience from all other media (except perhaps fulldome shows) is its immersiveness and ability to give audiences the impression that they have been transported to another place. Chief among the factors in achieving this effect is image quality."

Lutz pointed out that aspect ratio may be a factor that "has a real impact on a person's experience, but isn't necessarily detectable in a consumer survey of how they enjoyed the film, because they don't know what they're missing."

He countered those who claim that audiences haven't complained, and that attendance hasn't been affected by the 1.9 ratio, by claiming they were "leaving money on the table. The people who have made the transition from IMAX film to IMAX laser digital are experiencing very substantial *increases* in attendance and box office." He reiterated the following specifics, which he had mentioned at the GSCA conference last fall: Melbourne, Australia: up 14%; Victoria, Canada: up 20%; Branson, MO: up 30%; Chattanooga, TN up 40%; Sudbury, Canada: up 43%; and Sinsheim, Germany: up 61%.

He added that after the **Indiana State Museum** in Indianapolis added an IMAX



*Cinematographer James Neihouse.*

first-gen xenon system in early 2016, its attendance went up 89%, which he said was due to “first-rate quality, more flexible programming, a famous cinema brand, and marketing to up their game.”

## Domes

Domes represent nearly half of all non-multiplex GS theaters. A system capable of projecting the 1.43 ratio is far more important for them than it is for flat-screen theaters. Some 37 of the world’s 107 GS dome theaters have switched to digital full-dome systems, and another 13 have added digital to their film systems, meaning nearly half have some digital capability. However, most of these did not originally have IMAX film projectors.

Two small domes (the **Kansas Cosmosphere** in Hutchinson, KS, and the **Wells Fargo Cinedome Theater** in Sioux Falls, SD) have switched to a single 4K digital projector with a special fisheye lens that does not fill the height of the dome. They are the only two to do so to date.

As we reported previously (see *December 2016*) one theater has switched from IMAX film to the new D3D/Christie three-projector dome system. However, most IMAX Dome theaters (and some non-IMAX domes) are waiting to see the long-delayed IMAX laser dome system, which is expected in September 2018 (see *article, Feb.-March 2017*).

A far larger share of the 123 flat-screen theaters have switched to (77) or added (11) digital. But of those 88, only 16 have gone with the IMAX laser system, which has a 1.43 ratio. The rest have the standard 1.9 digital cinema ratio, either with the IMAX first-gen system (24), or one from another manufacturer (47).

Most dome operators we spoke to were committed to holding out for a system with a 1.43 or taller. (Full-dome systems are typically 1:1, although IMAX and other tilted domes rarely have screens with 180-degree coverage vertically.)

**Cassandra Henry**, president of **Science Spectrum**, in Lubbock, TX, has a 58-foot dome with a CDC 15/70 projector. She says that “coverage of the screen matters a lot for me. I think audiences will notice the coverage more in a dome than in a flat screen theater.”

**Robin Doty** of Boston’s **Museum of Science** says, “1:43 is the major characteristic that audiences can truly sense that separates the GS experience from all other movie experiences. It is crucial, and for domes indispensable.”

An IMAX Dome manager who asked not to be identified echoed Doty’s sentiments, and expressed concern about the availability of shows they currently show on film, and the cost of converting older films to any digital dome format.

However, one industry veteran tells *LF* he has recently changed his mind on this topic. **Berend Reijnhoudt** has been with **Omniversum**, an IMAX Dome theater in the Hague, Netherlands, since 2000. He says, “When *A Beautiful Planet* came out we almost did not take it, because it did not fill the whole dome. But after a test screening we programmed it anyway, and took our chances. It turned out we had *zero* complaints.” He did get complaints about other films that filled the dome but had inadequate picture quality. He admits, “So I have a different stand on this issue now than I did a year ago. I would rather have a picture that looks good (in resolution/colors) than a full dome picture that doesn’t look good. Of course, I would always prefer to have the whole dome filled with high-quality pictures, but if I need to give up some square meters to get a better quality, I would prefer that.”

## Conclusions

There is no simple answer to the aspect ratio question. Although the 1.43 ratio has been one of many unique components of giant-screen cinema since the beginning, opinions differ as to its importance as a standalone feature. It is almost certain that most people would agree that, in an ideal world, all GS theaters would have 1.43 screens. But in the real world, where 1.43 systems were either not available or were significantly more expensive, theaters had to make the best choices possible at the time. Many decided to forgo the tall ratio.

This means that for the foreseeable future, GS theaters will have a mix of aspect ratios, just as they have a variety of projection formats, screen shapes, seating arrangements, and so forth. It is conceivable that future digital systems may permit a greater degree of interoperability, with variable aspect ratios, for instance, in ways that are not possible now. New technologies, such as LED displays instead of projectors, could enable options we have not fully imagined today.

Theaters that have not yet switched to digital have more options than ever before, but still no easy answers. Each option has economic, esthetic, and practical pros and cons that can only be discovered through careful and impartial research. Each theater will have to weigh those factors against its values and capabilities, and make the decision it considers best.



*Imax Corp. VP Mike Lutz.*





All films are 3D unless noted, underlined titles are 2D

\* New listing.

Updated information is printed in **bold**.

Unless noted, all films run about 40 minutes. Some titles with limited release territories are not listed.

#### Wonder Woman

Warner Bros.; distributor: Warner Bros.; director: Patty Jenkins. Cast: Gal Gadot, Robin Wright, Chris Pine, Connie Nielsen, David Thewlis, Elena Anaya, Lucy Davis. 2D. DMR. Release: June 2.

#### The Mummy

Universal Pictures; distributor: Universal Pictures; director: Alex Kurtzman. Cast: Tom Cruise, Sofia Boutella, Annabelle Wallis, Russell Crowe, Jake Johnson, Chasty Ballesteros, Courtney B. Vance. DMR. Release: June 9.

#### Transformers: The Last Knight

Paramount Pictures; distributor: Paramount Pictures; director: Michael Bay. Cast: Mark Wahlberg, Anthony Hopkins, John Goodman, Laura Haddock, Isabella Moner, Stanley Tucci, Josh Duhamel, John Turturro. DMR. Release: June 23.

#### Spider-Man: Homecoming

Marvel Studios; distributor: Sony Pictures Entertainment; director: Jon Watts. Cast: Tom Holland, Donald Glover, Marisa Tomei, Robert Downey Jr., Jon Favreau, Michael Keaton, Zendaya. DMR. Release: July 7.

#### Dunkirk

Warner Bros.; distributor: Warner Bros.; director: Christopher Nolan. Cast: Tom Hardy, Cillian Murphy, Harry Styles, Mark Rylance, Kenneth Branagh, James D'Arcy. 2D. Release: July 21. DMR.

#### Cuba

Golden Gate 3D; distributor: Giant Screen Films; director, producer: Peter Chang. Release: Summer.

#### Inhumans

Imax Corporation, ABC Studios; distributor: ABC; director: Roel Reine. 2D. DMR. Release: Sept. 1.

– Filming for the first two episodes of the TV series in Hawaii, shot entirely with IMAX digital cameras, wrapped in April.

#### Kingsman: The Golden Circle

Twentieth Century Fox; distributor: Twentieth Century Fox; director: Matthew Vaughn. Cast: Taron Egerton, Channing Tatum, Halle Berry, Julianne Moore, Jeff Bridges, Colin Firth, Mark Strong. 2D. DMR. Release: Sept. 22.

#### Blade Runner 2049

Warner Bros.; distributor: Warner Bros.; director: Denis Villeneuve. Cast: Ryan Gosling, Jared Leto, Harrison Ford, Mackenzie Davis, Robin Wright, Dave Bautista. DMR. Release: Oct. 6.

#### Geostorm

Warner Bros.; distributor: Warner Bros.; director: Dean Devlin. Cast: Kathryn Winnick, Gerard Butler, Ed Harris, Jim Sturgess, Abbie Cornish, Andy Garcia. DMR. Release: Oct. 20.

#### Earth Story (wt)

December Media; distributor: MacGillivray Freeman Films; director: Russell Scott; producers: Stephen Amezdroz, Matt Downey; script: Don Hahn; executive producers: Tony Wright, Stuart Menzies. Release: October.  
– Have filmed in Iceland and will film in Australia in first quarter 2017.

#### Backyard Wilderness

Archipelago Films, Arise Media; distributor: SK Films; directors, producers: Andrew Young, Susan Todd; script: Susan Todd, Andrew Young; DP: Andrew Young. Release: Fall.  
– Principal photography is complete. Editing has begun.

#### The Trolley

Stephen Low Company; distributor: Stephen Low Company; director: Stephen Low; producer: Pietro Serapiglia. 2D. Release: Fall.  
– January: Sound mixing has started.

#### Thor: Ragnarok

Walt Disney Pictures; distributor: Walt Disney Pictures; director: Taika Waititi. Cast: Chris Hemsworth, Benedict Cumberbatch, Cate Blanchett, Idris Elba, Anthony Hopkins, Tom Hiddleston, Mark Ruffalo, Sam Neill. DMR. Release: Nov. 11.

#### Justice League

Warner Bros.; distributor: Warner Bros.; director: Zack Snyder. Cast: Amy Adams, Ben Affleck, Gal Gadot, Henry Cavill, Jeremy Irons, Diane Lane, Connie Nielsen, J.K. Simmons, Jesse Eisenberg. DMR. Release: Nov. 17.

#### Star Wars: The Last Jedi

LucasFilm Ltd.; distributor: Walt Disney Pictures; director: Rian Johnson. Cast: Carrie Fisher, Daisy Ridley, Mark Hamill, Adam Driver, Domhnall Gleeson, Oscar Isaac, Peter Mayhew, Gwendoline Christie, Benicio Del Toro, Warwick Davis, Anthony Daniels, Andy Serkis. DMR. Release: Dec. 15.

#### Hidden Pacific

Jun '17	Jul '17						Jan '18				
WW Mummy TTLK	SMH Dunki Cuba	Inhum KTGC BW	BR49 Geost EarthSt Trolley	Thor JL HidPac Record	SW8 FullCh Pono	AA HIOF Pandas		Volcan	IS		

Giant Screen Films, Tandem Stills; distributor: Giant Screen Films; director, producer: Ian Shive. Release: Late 2017.  
– Filmed at the Palmyra and Midway Atolls.  
– Shooting concludes in April.

#### The Record

AfterglowStudios; distributor: Big & Digital; director: Luke Ployhar; producers: Luke Ployhar, Ashley Jahnke; script: Barry Thorson. Release: late 2017.

#### Full Charge: The Power of Innovation (wt)

N3D Land Films; distributor: nWave Pictures; directors: Pascal Vuong, Ronan Chapalain; producers: Catherine Vuong, Pascal Vuong; script: Pascal Vuong; DP: Vern Nobles; score: Franck Marchal; executive producers: Franck Savorgnan, Christian Fry. Cast: Bertrand Piccard, André Borschberg. Release: 2017.  
– January: 2D and 3D animation started.

#### Pono: The Secret of Hawaii

Happy Planet Productions; distributor: tba; director, DP, writer: Pierre Hugues Routhier; producers: Richard W. Kroon, Margaret Goode; score: Cody Westheimer; executive producers: Pierre Hugues Routhier, Richard W. Kroon. Cast: "Uncle" Earl Kamakaona. Release: 2017.

#### Ancient Australia \*

Come on an epic scientific adventure through some of the most beautiful landscapes on earth. Wild Pacific Media; distributor: K2 Communications. Director, DP: Nick Robinson. Executive Producers: John Weiley, David Gross, John Maynard, Mark Kresser. Release: February 2018.

#### Hawaii: Islands of Fire (wt)

Ring of Fire Films, Inc.; distributor: tba; director, DP: Michael Lienau; producers: Jacob Lienau, Michael Lienau; script: Tab Murphy, Paul Quattrocchi, Michael Lienau; executive producer: David Cunningham. Release: early 2018.

#### Pandas: Return to Nature

Imax Corporation; distributor: Imax Corporation; director: Drew Fellman. Cast: Ben Kilham. Release: early 2018.  
– January: Filming started in Sichuan, China.

#### Volcanoes: The Fires of Creation

Digital Crossing Productions; distributor: SK Films; director, writer, DP: Michael Dalton-Smith; score: Robert Kroledge; executive producers: Michael Dalton-Smith, Jonathan Barker. Cast: Carsten Peters. Release: early 2018.  
– Spring: Filmed in Vanuatu and Tanzania.  
– Filming next in Italy, Japan, and Mexico.

#### Great Barrier Reef 3D (wt)

December Media; distributor: MacGillivray Freeman Films; directors: Stephen Amezdroz, Richard Fitzpatrick; producers: Stephen Amezdroz, Matt Downey; script: Don Hahn; executive producers: Tony Wright, Stuart Menzies. Release: April 2018.

#### In Saturn's Rings

BR

Avatar

AmTrea

ITWOTD TrainT  
Oceans

AncCav

DOC

LSP  
MaxPow

SupDog

RTE →

SV2 Studios; distributor: BIG & Digital; director, producer, writer, executive producer: Stephen van Vuuren. 2D. Release: Spring 2018 (flat and dome version); fall 2018 (fulldome).  
 – Rendering is more than half done.  
 – February: Seeking volunteers to donate render time on their computers.

#### In the Wake of the Dolphin (wt)

Milbrand Cinema; distributor: tbd; director, producer, DP: Lance Milbrand; editor: Dave Choice; score: Icarus Music. Cast: Kathleen Dudzinski, Eldon Bolton. Release: spring 2018.  
 – February: Filmed in Roatan and Utila, Honduras.

#### Oceans: The Blue Planet

BBC Earth, Alucia Productions; distributor: BBC Earth, Giant Screen Films. Release: Spring 2018.  
 – Principal photography is complete.

#### Train Time (wt)

Stephen Low Company; distributor: Stephen Low Company; director: Stephen Low; producer: Pietro Serapiglia. 2D. Release: Spring 2018.

#### Ancient Caves (wt)

Oceanic Research Group; distributor: MacGillivray Freeman Film Distribution; director, DP: Jonathan Bird; producers: Jonathan Bird, Art Cohen; script: Jonathan Bird, Art Cohen; score: Bruce Zimmerman; executive producer: Shaun MacGillivray. Cast: Dr. Gina Moseley, Dr. Larry Edwards, Brian

Kakuk, Todd Kelly. For 15/70 dome only. Release: mid 2018.

- February: Completed filming at the most extreme location of the film: Devil's Hole, Nevada, a highly protected, remote and dangerous sub-merged cave beneath the desert of Death Valley.
- Late 2017, early 2018: Filming planned for France, Mexico, Bahamas.

#### Avatar 2

Lightstorm Entertainment; distributor: Twentieth Century Fox; director: James Cameron. Cast: Zoe Saldana, Sigourney Weaver, Sam Worthington, Stephen Lan. Release: Dec. 21, 2018. DMR.

#### Dinosaurs of China (wt)

Saint Thomas Productions; distributor: K2 Communications. Narrator: James Faulkner. 2D. Release: 2018.

#### Lightspeed Pioneers

No Final Frontier Productions, Mind's Eye Creative, Wonder Mill Cosmos; distributor: BIG & Digital (flat-screen), Evans & Sutherland (fulldome); director, producer, writer: Lee Fanning. 2D. Release: 2018.

#### Maximum Power

Masters Digital, 144 Productions; distributor: tba; director: Daniel Stewart; producers Daniel Stewart, Tim Archer; executive producer: Domingo Vergoos-

sen. Release: 2018.

#### America's Treasures (wt)

MacGillivray Freeman Films; distributor: MacGillivray Freeman Films; director: Greg MacGillivray; producer: Shaun MacGillivray; script: Stephen Judson; DP: Brad Ohlund; score: Steve Wood; cast: Aloe Blacc. Release: February 2018.  
 – February: Filmed in New Orleans.  
 – April-May: Filming in Miami, Dallas, New York, Detroit, Chicago.

#### Superpower Dogs (wt)

Cosmic Picture; distributor: tbd; director: Daniel Ferguson; producers: Taran Davies, George Duffield, Daniel Ferguson, Dominic Cunningham-Reid; script: Daniel Ferguson; DP: Reed Smoot. Release: spring 2019.

- January, February: Tested doggie-vision camera rigs in Los Angeles, filmed in Miami with Florida Task Force 1 K9 unit.
- April: Will film deployment simulation in Disaster City, TX (College Station), with Texas TF-1 K9 units.

#### Return to Everest (wt)

MacGillivray Freeman Films; distributor: MacGillivray Freeman Films; director: Greg MacGillivray; producer: Shaun MacGillivray; script: Stephen Judson; DPs: Brad Ohlund, Michael Brown, Greg MacGillivray, Jack Tankard, Ron Goodman; score: Steve Wood. Release: 2019.



Filming geologist Dr. Gina Mosley in Devil's Hole in Death Valley, CA, for Ancient Caves.



## Premiering in April and May



Fate of the Furious

### **The Fate of the Furious**

"When a mysterious woman seduces Dom into the world of crime and a betrayal of those closest to him, the crew face trials that will test them as never before."

Produced and distributed by **Universal Pictures**. Directed by **F. Gary Gray**. Starring **Charlize Theron, Dwayne Johnson, Scott Eastwood, Jason Statham, Vin Diesel, Kurt Russell, Helen Mirren, and Jordana Brewster**. 2D. DMR. April 14.

### **Amazon Adventure**

"*Amazon Adventure* tells the exciting

story of Henry Bates' fascinating 11-year journey through the perilous Amazon rainforest as a young man who risks his life for science. As in any great detective story, audiences will experience the compelling clues Bates unearths

in his major discovery of the phenomenon of 'Batesian' mimicry, whereby certain animals develop the look of others and thus can deceive predators and prey—all unfolding in the visually stunning and bio-diverse Amazon. Although unknown to the general public, Bates made crucial contributions to evolutionary biology. While identifying 8,000 species new to science, he discovered the 'beautiful proof' for what is widely considered the most important explanation of the development of life on Earth: natural selection. With a team of over 100 scientific and historical

advisors, *Amazon Adventure* has undergone unparalleled research to ensure accuracy and bring this incredible story to life on the giant screen."

Produced and distributed by **SK Films**. Directed by **Mike Slee**, produced by **Jonathan Barker, Wendy MacKeigan, Mike Slee, and Yuri Sanada**, photographed by **Gerry Vasbenter** and **Richard Kirby**, written by **Wendy MacKeigan** and **Carl Knutson**, scored by **Antonio Pinto**. Executive producers: **Jonathan Barker** and **Sean B. Carroll**. Cast: **Calum Finlay, Ed Birch, Bege Muniz, William Postlethwaite, and Robert Daws**. Release: April 18.

### **Guardians of the Galaxy, Vol. 2**

"This summer, the galaxy won't save itself, obviously."

Produced **Marvel Studios** and distributed by **Walt Disney Pictures**. Directed by **James Gunn**. Starring **Chris Pratt, Karen Gillan, Zoe Saldana, Sylvester Stallone, Vin Diesel, Bradley Cooper, and Kurt Russell**. DMR. Release: May 5.

### **Alien: Covenant**

"The crew of the colony ship *Covenant*, bound for a remote planet on the far side of the galaxy, discovers what they think is an uncharted paradise, but is actually a dark, dangerous world. When they uncover a threat beyond their imagination, they must attempt a harrowing escape."

Produced and distributed by **Twentieth Century Fox**. Directed by **Ridley Scott**. Starring **Michael Fassbender, Katherine Waterston, Billy Crudup, Danny McBride, Demián Bichir, and Carmen Ejogo**. DMR. Release: May 19.



DP Gerry Vasbenter (r) films Calum Finlay as Henry Bates for SK Films' *Amazon Adventure*.



### **Pirates of the Caribbean: Dead Men Tell No Tales**

"Thrust into an all-new adventure, a down-on-his-luck Captain Jack Sparrow finds the winds of ill-fortune blowing even more strongly when deadly ghost pirates led by his old nemesis, the terrifying Captain Salazar, escape from the Devil's Triangle, determined to kill every pirate at sea...including him. Captain Jack's only hope of survival lies in seeking out the legendary Trident of Poseidon, a powerful artifact that bestows upon its possessor total control over the seas."

Produced and distributed by Walt Disney Pictures. Directed by **Joachim Rønning** and **Espen Sandberg**. Starring: **Johnny Depp**, **Orlando Bloom**, **Javier Bardem**,

**Kaya Scodelario**, **Brenton Thwaites**, **Geoffrey Rush**, and **Paul McCartney**. 2D. DMR. Release: May 26.

### ***Aircraft Carrier* (40-min. version)**

"The mission to protect and defend the world's oceans has become far more complex and challenging in recent years, and naval aviation has become increasingly vital to success. One of the greatest engineering feats in the history of warfare, the modern Nimitz-class carrier is a masterpiece of technology. With RIMPAC, the world's largest and most comprehensive international maritime training



Guardians of the Galaxy, Vol. 2

exercise providing the visual context for the story, audiences will find themselves aboard a carrier alongside the 6,000 highly skilled sea and air personnel in the midst

of the simulated war exercises taking place there, as well as in other exercises to be filmed in the upcoming year. Rarely has there been a topic so visually suited and compelling for IMAX theaters and other giant screens."

Produced and distributed by **K2 Communications** and **Giant Screen Films**. Directed by **Stephen Low**, produced by **Don Kempf**, **Bob Kresser**, **Mark Kresser**, and **Andy Wood**. Release: May 24 (40-min. version).



The 40-minute version of Stephen Low's *Aircraft Carrier* opens in May.

(from **SHORTS** on page 24)

the owners hadn't given the theater proper warning before the closure.

The Cinebowl & Grill opened in March 2015.

### **IMAX coming to yachts**

London-based **Fusion Automation Ltd.** has been certified to install IMAX home theaters, and is working on at least IMAX

installation on a new yacht under construction, according to *Superyacht News*. Founder Piers Collinson told the publication that in addition to several land-based private IMAX theaters in the works, his company has "several other potential yacht projects as well."

The IMAX Palais home system, intended for 10-12-seat theaters, is best suited to yachts. The specific requirements of

IMAX theater design — in particular, the tall aspect ratio of the screen — make retrofitting a theater into an existing yacht more difficult than designing it into the vessel from the start. The cost of shipboard IMAX theaters can range from about \$800,000 to \$3.2 million. Keep these points in mind before you buy, or commission, your next yacht.

# Bookings: April-May 2017 by Film

## 587 bookings of 85 films in 168 theaters

These listings do not include Hollywood films shown in multiplex IMAX theaters. Those films are listed when they are shown in non-multiplex theaters, and conversely, non-Hollywood giant-screen films showing on multiplex IMAX screens are also listed.

Listings shown in **bold face** below are new or updated listings. The rest are unchanged from the previous

month's issue.

The data on the following pages are *not* warranted to be comprehensive or accurate in every detail, despite our best efforts to make them so. They have been compiled from theater surveys, distributors, the Web, and other sources.

We will make every effort to improve the thorough-

ness, and accuracy of these data. If your theater or film is not shown here, please get in touch with us to update our listings.

Where a date is not shown, it means that no date was provided by the source or, in the case of a closing date, that no date has been set, or that the run is indefinite.

**The key to film abbreviations is on page 21.**

Film	Theater	Open	Close	Film	Theater	Open	Close	Film	Theater	Open	Close	
ACGOTS	Columbus GA NIM	5/26/17	6/17/18	Chantilly		2/17/17	2/16/20	Indianapolis Imx		2/24/17		
	Corpus Christi Lex	6/17/16		Chattanooga TA		2/17/17	2/16/18	Jersey City		10/15/16	10/14/17	
	Dayton	6/17/16	5/31/17	Chicago MSI		2/17/17	2/16/18	Kansas City Sci		10/15/16	10/14/17	
	Memphis Pink	5/7/16	6/22/18	Cleveland		3/17/17	2/16/18	Lehi		10/15/16	10/14/17	
Africa	Hague	10/11/16	10/11/17	Columbus COSI		2/17/17	2/16/18	Louisville KSC		10/15/16	10/14/17	
AIWC	Chandigarh	9/5/14	9/5/17	Davenport Put		2/24/17	2/23/18	Lubbock SS		3/4/17	2/23/18	
Alaska	Shijiazhuang HST	1/1/17	1/1/19	Dayton		5/26/17	5/25/18	McMinnville		10/27/16	10/26/17	
AmazAdve	Atlanta FMNH	5/20/17	11/19/17	Dearborn THF		2/17/17	2/16/18	Memphis Pink		3/24/17	5/28/18	
	Boston MOS	4/14/07	10/13/17	Denver MNS		2/17/17	2/16/18	Milwaukee		10/15/16	10/14/17	
	Boston NEA	4/24/17	4/23/18	Des Moines		2/24/17	2/23/18	Orlando SC		10/15/16	10/14/17	
	Charlotte DP	5/1/17	4/30/18	Detroit MSC		2/17/17	2/16/18	Peoria RM		10/15/16	10/14/17	
	Chattanooga TA	5/26/17	5/25/18	Edmonton TWS		3/25/17	3/24/18	Philadelphia FI		2/11/17	10/14/17	
	Chicago MSI	5/26/17	5/25/18	Fort Lauderdale		2/17/17	2/16/18	Pittsburgh CSC		10/15/16	10/14/17	
	Fort Lauderdale	4/28/17	4/27/18	Fort Worth		2/17/17	2/16/18	Raleigh		10/17/16	10/14/17	
	Galveston	5/27/17	1/30/18	Hampton VASC		2/17/17	2/16/18	Regina		10/15/16	10/14/17	
	Houston MNS	4/21/17	12/31/17	Harrisburg		2/18/17	2/17/18	Sacramento Imx		2/24/17		
	Saint Augustine	4/28/17	4/30/18	Houston MNS		2/17/17	2/16/18	Saint Augustine		10/15/16	1/1/18	
	Salt Lake City Clark	4/14/17	4/13/18	Huntsville USSRC		2/17/17	2/16/18	Salt Lake City Clark		10/24/16	10/23/17	
	San Jose Tech	5/6/17	5/5/18	Hutchinson		2/17/17	2/16/18	San Diego RHF		11/11/15	10/14/17	
	Tallahassee CLC	4/28/17	10/27/17	Jersey City		2/17/17	8/16/18	San Jose Tech		10/15/16	10/14/17	
	Victoria DCI	4/14/07	10/15/17	Kansas City Sci		5/26/17	5/25/18	Sioux Falls		2/1/17	2/3/18	
	Virginia Beach AMSC	5/27/17	10/26/17	Los Angeles CSC		2/17/17	2/11/18	Sudbury		10/15/16	10/14/17	
	Washington NASM	4/21/17	12/31/17	Louisville KSC		2/17/17	2/16/18	Victoria DCI		10/28/16	10/14/17	
	Washington NMNH	4/21/17	12/31/17	Mexico City Pap		3/15/17	3/14/18	Virginia Beach AMSC		10/15/16	10/14/17	
Amazon	Syracuse MOST	4/1/16	5/31/17	Norwalk MA		2/17/17	2/16/18	Yellowstone		1/23/17	10/14/17	
	Galveston	3/4/17	5/26/17	Orlando SC		2/17/17	8/16/18	FightPil		12/10/04		
	Melbourne MV	7/11/16		Pensacola NAM		3/1/17	6/30/18	Corpus Christi Lex		5/12/12		
AOTE	Sioux Falls	4/1/16	6/30/17	Peoria RM		2/18/17	2/17/18	Dayton		3/1/13		
AsterME	Athens Eug	3/30/17	9/30/18	Phoenix ASC		2/17/17	2/16/18	Huntsville USSRC		7/1/13		
	Garden City	5/19/17	6/18/18	Pittsburgh CSC		2/17/17	2/16/18	McMinnville		3/23/12		
	Salt Lake City Clark	4/29/16	12/31/17	Portland OMSI ET		2/17/17	2/16/18	FlyMons	Garza Garcia	1/12/12	4/23/17	
BeauPlan Bugs	Calgary TS	9/28/15	9/28/18	Raleigh		2/17/17	2/16/18		Kenner		6/4/16	6/3/17
	Columbus COSI	9/15/14	6/30/17	Regina		2/17/17	2/16/18		Kuwait SCK		9/5/16	9/4/17
	Davenport Put	10/1/12	4/28/18	Richmond SMV		2/18/17	2/17/18		Philadelphia FI		11/25/16	
	Edmonton TWS	12/26/13	6/30/17	Saint Augustine		2/17/17	2/16/18	FMTTM FON	Copenhagen TBP	1/1/16	12/31/17	
CRA	Fort Worth	2/1/16	6/30/17	Saint Louis SC		2/17/17	2/16/18	Baltimore MSC		1/1/13	6/30/17	
	Lodz CC	8/24/15	8/24/18	San Diego RHF		3/10/17	3/9/18	Boston MOS		7/1/09	6/30/17	
	San Diego RHF	7/1/14	6/30/17	San Jose Tech		2/17/17	2/16/18	Columbus COSI		8/1/14	3/30/18	
	Vancouver TWS	3/11/06	6/30/18	Seattle PSC 2		2/17/17	2/16/18	Davenport Put		5/18/16	5/17/17	
	Hartberg	3/25/15	6/1/17	Sudbury		2/17/17	2/16/18	Edmonton TWS		12/26/13	6/30/17	
	D-Day	Erie	11/11/15	7/6/17	Tallahassee CLC		2/17/17	2/16/18	Fort Worth		9/1/15	6/9/17
		Fort Worth	9/5/15	6/30/17	Toronto OSC		2/17/17	8/16/18	Hague		10/4/12	10/3/17
		Gatineau	9/1/15	3/30/18	Vancouver TWS		3/4/17	2/16/18	Harrisburg		10/15/15	11/2/17
		Hastings	5/15/15	12/31/18	Victoria DCI		3/17/17	3/16/18	Louisville KSC		6/18/15	7/2/18
	Hutchinson	4/21/14	6/30/17	Washington NASM		2/17/17	2/16/20	Melbourne MV		9/1/15	8/31/17	
	DinoAliv	Seattle PSC 2	3/29/14	6/30/19	Davenport Put		2/6/15		Pittsburgh CSC		1/1/16	12/31/17
		Sudbury	5/30/16	6/1/17	Dearborn THF		3/25/16	1/17/18	Raleigh		2/1/12	9/17
		Vancouver TWS	11/7/15	11/12/17	Peoria RM		11/17/16	11/16/17	FOTB	Apple Valley Imx	6/5/15	1/12/18
		Atlanta FMNH	8/15/16	8/14/17	Portland OMSI ET		1/16/15	6/4/17		Baton Rouge LASM	9/1/15	8/31/17
		Davenport Put	2/1/15	6/30/17	Victoria DCI		2/3/17	3/2/18		Chicago MSI	2/28/14	6/30/17
		Fort Worth	7/15/16	9/30/17	Hastings		2/1/17	1/31/18		Cleveland	11/27/13	6/30/17
		Galveston	1/1/17	11/1/17	Baltimore MSC		9/15/15	9/14/17		Columbus COSI	9/1/14	6/30/17
Houston MNS		12/15/15	6/30/17	Hartberg			6/30/17	Davenport Put		2/15/13	6/30/17	
Mexicali		11/5/16	9/30/17	Saint Paul SMM		3/3/17	5/4/17	Dearborn THF		2/8/17	12/31/17	
Mobile		9/24/16	4/14/17	Atlanta FMNH		2/4/17		Edmonton TWS		12/26/13	6/30/17	
Tampa MOSI		1/30/16	6/30/17	Birmingham AL		1/20/17	9/28/17	Gatineau		10/5/12	6/30/17	
Fort Worth		5/28/16	12/31/17	Boston MOS		10/15/16	10/14/17	Hampton VASC		3/29/13	6/30/17	
Speyer Dome			12/31/17	Davenport Put		10/15/16	2/14/18	Harrisburg	2/2/14	6/30/17		
Syracuse MOST		4/1/16	5/31/17	Denver MNS		1/13/17		Hastings	3/17/13	6/30/17		
Dragons		Tijuana	5/1/17	5/31/17	Des Moines		10/15/16	10/14/17	Houston MNS		10/4/12	12/31/17
		Syracuse MOST	7/2/16	7/1/17	Detroit MSC		5/22/17	5/21/18	Louisville KSC		9/30/12	6/30/17
DreamBig		Thessaloniki	10/1/16	9/30/17	Erie		3/1/15	3/14/18	Memphis Pink		3/1/14	5/27/17
	Atlanta FMNH	2/17/17	2/16/18	Hastings		10/19/16	10/14/17	Orlando SC		3/1/14	6/30/17	
	Baltimore MSC	2/17/17	2/16/18	Houston MNS		10/15/16	10/14/17	Peoria RM		4/1/16	8/26/17	
	Birmingham AL	2/17/17	2/16/18	Hutchinson		10/24/16	10/14/17	Phoenix ASC		10/7/16	3/1/18	

Film	Theater	Open	Close	Film	Theater	Open	Close	Film	Theater	Open	Close
G3DNW	Pittsburgh CSC	3/15/13	7/31/17	IncrPred	Montreal SC	9/23/16	6/16/17	LastReef	Portland OMSI ET	7/21/15	7/20/17
	Richmond SMV	5/1/13	6/30/18		New York AMNH	3/3/17	9/3/17		Raleigh	1/1/15	12/31/17
	Sacramento Imx	8/13/13	6/30/17		Nuremberg		6/1/17		Sacramento Imx	7/1/15	12/31/17
	Saint Augustine	1/18/13	12/31/17		Orlando SC	10/28/16	10/27/17		Saint Augustine		6/30/17
	Saint Paul SMM	7/1/16	6/30/17		Paris Geo	7/7/15	6/1/17		Saint Louis SC	8/1/15	7/30/17
	Salt Lake City Clark	2/8/13	8/6/17		Richmond SMV	3/14/15	6/1/17		San Diego RHF		9/30/17
	San Diego RHF	10/12/12	9/30/17		Sacramento Imx	8/19/16	5/30/17		San Jose Tech	6/8/16	6/20/17
	San Jose Tech	2/9/13	6/30/17		Tallahassee CLC	2/20/15	6/1/17		Cleveland	7/1/16	6/30/17
	Syracuse MOST	7/4/15	7/3/17		Tijuana	7/15/16	7/14/17		Davenport Put	7/1/15	6/30/17
	Tallahassee CLC	1/18/13	6/30/17		Albuquerque NMMNH	12/17/16	1/1/18		Dongguan STM	4/1/16	4/1/17
	Valencia Spn	7/1/15	6/30/17	Jerusalem	Cleveland	4/14/17	4/30/18		Hutchinson	10/5/12	9/30/17
	Vancouver TWS	6/16/13	6/30/17		Salt Lake City Clark	2/17/17	2/17/18		Lehi	6/24/16	6/30/17
	Vantaa	5/9/17	1/15/18		Sioux Falls	12/22/16	6/30/18		Louisville KSC	2/8/14	6/30/17
	Victoria DCI	4/5/13	6/30/17		Chattanooga TA	3/27/15	3/27/18		Moscow Kin	6/1/16	10/31/17
	Albuquerque NMMNH	3/18/17	3/17/18		Columbus COSI	2/11/15	12/12/17		Sacramento Imx	5/20/16	6/30/17
	Apple Valley Imx	10/3/14	4/28/17		Columbus GA NIM	10/18/13	2/7/18		Sioux Falls	1/30/15	6/30/17
	Berlin CS	4/20/14	10/19/17		Edmonton TWS	12/26/13	1/31/18		Tallahassee CLC	1/17/14	6/30/17
	Bogota Mal	6/24/16	6/23/17		Louisville KSC	1/20/14	7/2/18	LITAOA	Chantilly	5/1/15	
	Boston NEA	2/15/16	9/30/17		McMinnville	9/27/13	2/28/18		Davenport Put	7/1/16	9/30/17
	Budapest CC	4/24/14	5/21/17		Raleigh	2/21/14	2/28/18		Edmonton TWS	6/12/15	
	Davenport Put	10/17/14	10/20/17	JIAC	Baltimore MSC	9/15/15	9/14/17		Garden City	4/10/15	
	Guayaquil	4/20/14	5/4/17		Nanchang JTSC	11/10/16	11/10/17		Gatineau	4/18/16	4/17/17
	Hastings	2/10/15	6/10/17		Al Khobar	9/5/16	9/5/17		Hampton VASC	4/10/15	
	Houston MNS	6/6/16	5/31/17		Edmonton TWS	5/20/16	12/31/17		Melbourne MV	2/8/17	6/30/17
	Katowice CC	6/18/14	9/19/17		Edmonton TWS	11/15/16	12/31/17		Washington NASM	4/10/15	
	Krakow CC	6/18/14	9/19/17		Guayaquil	4/15/16	4/14/17	LivingSe LOF MA	Hartberg	10/1/13	12/31/17
	Lodz CC	6/18/14	9/19/17		Jersey City	2/17/17	7/31/17		McMinnville	3/23/12	
	Louisville KSC	6/18/15	6/30/18		Kuwait SCK	7/17/15	7/17/17		Kurashiki	7/5/16	7/4/17
	Melbourne MV	4/11/16	4/10/18		Memphis Pink	6/25/16	6/23/17		Melbourne MV	1/1/17	1/1/18
	Moscow Kin	10/6/14	8/31/17		Poitiers Solido	2/1/16	12/31/17		Albuquerque NMMNH	9/1/16	9/1/17
	Orlando SC	7/5/14	1/4/18		Port of Spain	2/7/17	2/7/18		Charlotte DP	11/19/16	4/30/17
	Philadelphia FI	9/6/16	9/5/17		Shanghai 3D STM	12/31/16	12/31/17		Columbus COSI	4/1/17	3/31/18
	Poznan CC	6/18/14	9/19/17		Shenyang LSTM	11/1/16	11/1/17		Edmonton TWS	1/27/17	1/31/18
	Prague CC	5/22/14	5/21/17		Sudbury	3/11/17	9/10/17		Fort Worth	10/14/16	10/31/17
	Saint Augustine	4/1/15	4/30/17	JTM	Valencia Spn	4/1/17	3/31/18		Hague	5/16/17	12/31/17
	San Diego NHM	5/1/17	1/30/18		Edmonton TWS	12/26/13	6/30/17		Lehi	9/1/16	8/31/17
	Seattle PSC 2	11/20/15	4/30/17		London BFI Ode		1/31/18		London BFI Ode	1/20/17	1/31/18
	Toyohashi	3/1/17	6/30/17	JTS	Aguascalientes	6/17/16	8/15/17		Saint Louis SC	10/1/16	10/1/17
	Victoria DCI	9/4/15	6/30/18		Alamogordo	7/1/16	6/20/17	MOF	Tijuana	5/15/17	10/15/17
	Virginia Beach AMSC	5/28/16	10/27/17		Albuquerque NMMNH	4/30/16	4/30/17		Pensacola NAM	11/8/96	
	Warsaw CC	6/18/14	9/19/17		Baltimore MSC	7/1/16	6/30/17		Speyer Dome		12/31/17
	Grand Canyon DCI	11/1/99	12/17		Chantilly	5/1/15	5/1/17		Cairo EMA	12/15/15	12/14/17
	Grand Rapids Cel	4/22/16	4/21/17		Chattanooga TA	1/6/17	1/6/18		Charleston CCAS	10/27/16	10/26/17
	Richmond SMV	6/1/16	6/1/17		Chattanooga TA	5/26/17	5/31/18		Saint Paul SMM	3/3/17	5/4/17
	Des Moines	10/1/16	10/1/18		Cleveland	10/1/16	10/1/17		Tijuana	4/1/17	4/30/17
	Edmonton TWS	10/1/16	10/1/18		Columbus COSI	5/24/17	12/31/17	MOTUW	Athens Eug	4/13/16	4/10/17
	Philadelphia FI	10/1/16	10/1/17		Erie	6/18/16	6/18/17		Columbus COSI	11/19/14	3/30/18
	Seattle PSC 1	10/1/16	10/1/17		Garden City	7/1/16	7/1/17		Copenhagen TBP	6/19/14	6/18/17
	Vancouver TWS	10/1/16	10/1/18		Hampton VASC	2/21/15	2/20/18		Dearborn THF	3/25/16	1/17/18
GC	Baltimore MSC	9/14/17			Harrisburg	9/14/15	6/30/17		Garden City	9/2/14	9/1/17
	Saint Augustine	1/1/15	12/31/17		Hutchinson	2/20/15	7/2/18		Gatineau	1/15/16	6/30/18
	Saint Augustine	2/1/15	12/31/17		Kolkata SC	7/1/16	7/1/17		Hague	10/1/15	12/17
	Albuquerque NMMNH	7/1/16	6/30/17		KSC 1	2/27/15			London SM	8/1/14	7/31/17
	Atlantic City	5/25/17	5/31/18		Lehi	1/1/16	6/30/17		Milwaukee	10/1/14	7/30/17
	Boston NEA	5/31/13	4/30/18		Louisville KSC	4/3/15	6/30/18		Peoria RM	1/17/15	3/30/18
	Chicago MSI	5/27/16	5/31/17		Lucerne	11/26/16	11/26/17		Philadelphia FI	7/1/14	4/30/17
	Gatineau	10/7/16	6/30/18		Memphis Pink	1/9/16	5/29/17		Raleigh	11/1/15	10/31/17
	Mobile	5/28/16	5/30/17		Peoria RM	6/11/16	12/31/17		San Jose Tech	8/30/14	6/20/17
	New Orleans	12/26/16	12/31/17		Phoenix ASC	10/1/16	10/1/17		Singapore SC	6/13/16	12/31/17
GCA	Phoenix ASC	9/15/16	9/30/17	JTTSP	Salt Lake City Clark	5/15/15	5/31/17	Mummies	Stockholm	9/18/15	9/1/17
	Sacramento Imx	2/20/15	6/30/17		San Jose Tech	4/30/16	6/30/17		Valencia Spn	7/1/14	6/17
	Tampa MOSI	1/1/16	6/30/18		Sioux Falls	8/19/16	8/19/17		Guayaquil	4/23/07	2/28/18
	San Simeon DCI	8/17/96			Syracuse MOST	10/1/16	4/1/17		Mobile	5/28/16	5/30/17
	Tallahassee CLC		6/1/17		Taichung NMNS	7/1/16	6/30/17		Saint Louis SC	5/27/17	1/7/18
	Valencia Spn		6/1/17		Taipei AM	7/1/16	7/1/17	ND Niagara	New Delhi ICC		
	New Orleans		12/31/17		Tijuana	4/1/16	4/1/17		Niagara Can DCI	7/1/86	
	Charlotte DP		5/1/17		Washington NASM	3/6/15			Niagara NY DCI	5/1/07	
	Hague	1/11/11	12/31/17		Columbus COSI	11/26/16	10/22/17		Alamogordo	3/24/17	3/23/18
	Stockholm	1/1/12	12/31/17		Lubbock SS	11/25/16	5/26/17		Baton Rouge LASM	11/1/16	10/31/17
	Toronto OSC	1/1/15	12/31/17		Monterrey Pap	12/10/16	4/10/17		Birmingham AL	5/20/16	5/19/17
	Vancouver TWS	7/1/16	6/30/18		Saint Paul SMM	5/5/17	6/1/18		Boston MOS	2/12/16	6/1/17
	Apple Valley Imx	2/3/17	9/30/17		Speyer Dome	5/25/17	5/24/18		Branson	3/18/16	12/31/17
HumpbWha	Baltimore MSC	7/1/15	6/1/17	L&C	Stockholm		9/30/17		Carnival Vista	11/4/16	5/4/17
	Copenhagen TBP	10/8/15	6/1/17		Baltimore MSC	10/1/15	6/30/17		Chandigarh	9/5/16	9/4/17
	Davenport Put	6/1/16	6/1/17		Baton Rouge LASM	11/3/15	11/2/18		Charleston CCAS	10/27/16	7/1/17
	Hague	6/28/16	6/17/17		Columbus GA NIM		2/7/18		Columbus GA NIM	4/1/16	9/1/17
	Indianapolis Imx	8/17/16	5/31/17		Davenport Put		4/26/17		Copenhagen TBP	2/12/16	6/1/17
	Kuwait SCK	7/6/16	7/5/17		Garden City		9/27/17		Dearborn THF	3/25/16	11/26/17
	Lucerne	10/6/16	10/5/17		Harrisburg	11/7/16	11/3/17		Denver MNS	7/1/16	6/30/17
	Mexico City PAP	11/16/16	11/15/17		Louisville KSC	7/1/16	7/2/17		Des Moines	2/12/16	6/1/17



Film	Theater	Open	Close	Film	Theater	Open	Close	Film	Theater	Open	Close
	Dongguan STM	1/25/17	1/24/18		Cathedral City	5/1/17	4/30/18		Orlando SC	8/6/16	8/31/17
	Garza Garcia	2/24/17	6/29/17		Hastings	6/1/15	5/31/17		Poitiers Imax	4/1/16	4/30/17
	<b>Hague</b>	<b>2/16/16</b>	<b>6/1/17</b>		Louisville KSC	7/4/14	7/2/17		Saint Felicien	5/1/16	5/1/17
	Hampton VASC	4/29/16	4/28/17		Milwaukee	6/13/14	6/30/17		Seattle PSC 1	9/12/15	9/12/17
	Harbin STM	1/1/17	12/31/17	<b>Rescue</b>	Dayton	6/1/16	6/1/17		Sudbury	6/4/16	5/31/17
	Harrisburg	7/1/16	6/30/17		McMinnville	6/1/12			Victoria DCI	12/2/16	12/2/17
	Hastings	6/9/16	6/8/17	<b>RobotsNG</b>	Davenport Put	11/1/15	10/31/17	<b>ToFly</b>	Rochester MSC	7/1/16	6/30/18
	Houston MNS	2/12/16	5/31/17		Dearborn THF	3/25/16	1/17/18		Washington NASM	3/7/16	12/31/17
	Kansas City Sci	5/31/16	5/30/17		Guayaquil	4/1/17	3/31/18	<b>TOTIA</b>	Vancouver TWS	6/1/16	6/30/17
	Kaohsiung NSTM	7/1/16	6/30/17		Hampton VASC	6/20/15	6/19/18	<b>TTA</b>	Moscow Kin	1/11/16	12/31/17
	Kitakyushu	7/2/16	6/30/17		Huntsville USSRC	6/5/15	6/4/17		Paris Geo	10/6/15	6/1/17
	Lehi	3/24/17	3/2/18		Hutchinson	5/20/16	5/20/17		Saint Paul SMM	3/3/17	5/4/17
	<b>Louisville KSC</b>	<b>2/12/16</b>	<b>6/1/17</b>		London SM	5/23/15	2/28/18		Seattle PSC 2	1/20/17	12/31/17
	Lubbock SS	5/20/16	5/19/17		Milwaukee	5/1/16	6/30/17	<b>VanGogh</b>	Hague	9/1/15	6/1/17
	<b>Lucerne</b>	<b>3/17/16</b>	<b>9/17/17</b>		Pensacola NAM	4/15/17			Tijuana	3/24/17	3/23/18
	<b>Lucknow</b>	<b>2/6/17</b>	<b>8/5/17</b>		Philadelphia FI	10/1/16		<b>VOT</b>	Salt Lake City Clark	10/21/16	6/30/17
	<b>Memphis Pink</b>	<b>3/5/16</b>	<b>6/1/17</b>		Phoenix ASC	9/17/16		<b>WATE</b>	Katoomba	6/1/97	
	Milwaukee	9/17/16	9/16/17		Saint Augustine	8/1/16	7/30/17	<b>WildAfri</b>	Al Khobar	4/15/16	4/30/17
	Montreal SC	2/20/17	2/19/18		<b>Saint Louis SC</b>	<b>6/5/15</b>			Apple Valley Imx	2/1/16	6/30/17
	Norwalk MA	5/27/16	5/10/17		<b>San Jose Tech</b>	<b>10/3/15</b>	<b>10/2/17</b>		Austin TSHM	2/2/17	2/28/18
	<b>Nuremberg</b>	<b>3/3/16</b>	<b>6/1/17</b>		<b>Singapore SC</b>	<b>5/1/17</b>	<b>4/30/18</b>		Chattanooga TA	11/16/16	11/30/17
	<b>Omaha Zoo</b>	<b>2/12/16</b>	<b>6/1/17</b>		Sioux Falls	3/4/16			Denver MNS	9/23/16	9/30/17
	<b>Paris Geo</b>	<b>4/3/17</b>	<b>12/31/17</b>		Tallahassee CLC	10/16/15	10/14/17		Edmonton TWS	10/28/16	10/31/17
	Parker	1/27/17	7/28/17		Tampa MOSI	10/5/16	10/4/17		Galveston	5/28/16	5/31/17
	Penrith	3/27/17	9/3/17		<b>Victoria DCI</b>	<b>2/3/17</b>			Gatineau	6/24/16	6/30/17
	Pensacola NAM	9/5/16	9/4/17	<b>ROF</b>	Baltimore MSC	9/15/15	9/14/17		Houston MNS	6/1/16	6/30/17
	Peoria RM	8/27/16	8/26/17	<b>ROTB</b>	Saint Augustine	10/15/15	12/31/17		Memphis Pink	1/7/17	5/28/17
	<b>Portland OMSI ET</b>	<b>2/12/16</b>	<b>6/1/17</b>	<b>SeaMonst</b>	Davenport Put	4/27/16	4/26/18		Mobile	1/20/17	5/28/17
	Quebec Cpx	6/24/16	6/23/17		Pittsburgh CSC	7/1/16	12/31/17		Richmond SMV	2/1/17	
	<b>Raleigh</b>	<b>2/27/16</b>	<b>6/1/17</b>		Richmond SMV	6/20/14	8/31/17		San Diego NHM	9/7/16	9/30/17
	Richmond SMV	4/10/16	4/9/17		San Diego RHF	2/2/17	9/4/17		Stockholm	6/1/16	6/30/17
	<b>Salt Lake City Clark</b>	<b>2/12/16</b>	<b>8/31/17</b>		Valencia Spn	7/1/16	12/31/17		Tallahassee CLC	5/15/16	5/31/17
	San Antonio San	7/25/16	7/25/17	<b>SFLIS</b>	Atlanta FMNH	10/7/16	10/6/17		Tampa MOSI	12/1/16	11/30/17
	<b>San Diego RHF</b>	<b>3/18/16</b>	<b>6/1/17</b>		Copenhagen TBP	2/9/17	2/8/18		<b>Tijuana</b>	<b>10/1/16</b>	<b>10/1/17</b>
	<b>San Jose Tech</b>	<b>2/12/16</b>	<b>6/1/17</b>		Hampton VASC	10/21/16	10/20/17	<b>WildOcea</b>	Davenport Put	2/1/15	6/30/17
	<b>Shanghai 3D STM</b>	<b>12/1/16</b>	<b>12/17/17</b>		Lubbock SS	10/7/16	10/6/17		<b>Mexicali</b>	<b>5/17/17</b>	<b>10/30/17</b>
	Shreveport	2/12/16	6/1/17		Melbourne MV	3/16/17	3/22/18		Guayaquil	4/20/16	4/19/17
	Sinsheim	3/4/16	6/1/17	<b>Sharks3D</b>	Penrith	1/1/17	4/30/17	<b>WM</b>	Orlando SC	7/1/16	6/30/17
	Sioux Falls	8/13/16	8/12/17	<b>SpaceNex</b>	Puebla PDP	4/1/16	4/1/17	<b>WOTA</b>	Vancouver TWS	1/1/17	1/31/18
	<b>Sudbury</b>	<b>2/12/16</b>	<b>6/30/17</b>		Calgary TS	1/1/17	12/31/18	<b>WWDDP3D</b>	Bradford	9/16/15	9/30/17
	Tallahassee CLC	2/19/16	6/1/17		Columbus GA NIM	11/25/16	12/31/17		Copenhagen TBP	12/1/16	5/31/17
	Tampa MOSI	2/12/16	6/1/17		Hong Kong SM	1/1/17	6/30/17		Erie	9/15/16	9/30/17
	Toronto OSC	7/1/16	6/30/17		Huntsville USSRC	3/1/16	8/31/17		Las Palmas	5/30/16	5/30/17
	Valencia Spn	10/7/16	10/6/17	<b>SpacJunk</b>	Hutchinson	10/31/14	10/31/17		Lehi	9/26/14	9/30/17
	<b>Vancouver TWS</b>	<b>2/12/16</b>	<b>6/30/17</b>	<b>TinyGian</b>	<b>Austin TSHM</b>	<b>4/29/17</b>	<b>9/30/17</b>		Milwaukee	2/1/16	6/30/17
	<b>Washington NMNH</b>	<b>2/12/16</b>	<b>2/11/18</b>		Bradford	9/1/16	9/30/17		<b>Orlando SC</b>	<b>4/1/17</b>	<b>3/31/18</b>
	Yellowstone	5/1/16	4/30/17		Cleveland	10/1/16	10/31/17		Saint Augustine	1/9/17	1/31/18
<b>Ozarks</b>	Branson	9/93	12/17		Columbus COSI	3/11/15	10/31/17		Valencia Spn	7/1/16	7/31/17
<b>Penguins</b>	Ahmedabad	7/1/16	6/30/17		Galveston	9/1/16	9/1/17		<b>Victoria DCI</b>	<b>5/1/17</b>	<b>4/30/18</b>
	Matsusaka	1/14/17	4/16/17		Gatineau	12/23/16	12/31/17	<b>Yell</b>	Yellowstone	5/1/14	12/31/17
<b>PTJH</b>	<b>Apple Valley Imx</b>	<b>2/20/15</b>	<b>10/18/17</b>		Las Palmas	5/30/16	5/30/17				

## April-May 2017 by Theater

Theater	Film	Open	Close	Theater	Film	Open	Close	Theater	Film	Open	Close
Aguascalientes	JTS	6/17/16	8/15/17		ExtrWeat	2/4/17		Bogota Mal	G3DNW	6/24/16	6/23/17
Ahmedabad	Penguins	7/1/16	6/30/17		SFLIS	10/7/16	10/6/17	<b>Boston MOS</b>	<b>AmazAdve</b>	<b>4/14/07</b>	<b>10/13/17</b>
Al Khobar	JMCSO	9/5/16	9/5/17	<b>Atlantic City</b>	<b>GWS</b>	<b>5/25/17</b>	<b>5/31/18</b>		ExtrWeat	10/15/16	10/14/17
	WildAfri	4/15/16	4/30/17	<b>Austin TSHM</b>	<b>TinyGian</b>	<b>4/29/17</b>	<b>9/30/17</b>		FON	7/1/09	6/30/17
Alamogordo	JTS	7/1/16	6/20/17		WildAfri	2/2/17	2/28/18		<b>NPA</b>	<b>2/12/16</b>	<b>6/1/17</b>
<b>Albuquerque NMNH</b>	<b>G3DNW</b>	<b>3/18/17</b>	<b>3/17/18</b>	<b>Baltimore MSC</b>	<b>WildBig</b>	<b>2/17/17</b>	<b>2/16/18</b>	<b>Boston NEA</b>	<b>AmazAdve</b>	<b>4/24/17</b>	<b>4/23/18</b>
	GWS	7/1/16	6/30/17		Everest	9/15/15	9/14/17		G3DNW	2/15/16	9/30/17
	IncrPred	12/17/16	1/1/18		FON	1/1/13	6/30/17		GWS	5/31/13	4/30/18
	JTS	4/30/16	4/30/17		Greece	9/14/17		<b>Bradford</b>	TinyGian	9/1/16	9/30/17
	MOC	9/1/16	9/1/17		<b>HumpbWha</b>	<b>7/1/15</b>	<b>6/1/17</b>		WWDDP3D	9/16/15	9/30/17
<b>Apple Valley Imx</b>	FOTB	6/5/15	1/12/18		JACS	9/15/15	9/14/17	<b>Branson</b>	NPA	3/18/16	12/31/17
	G3DNW	10/3/14	4/28/17		JTS	7/1/16	6/30/17		Ozarks	9/93	12/17
	HumpbWha	2/3/17	9/30/17		L&C	10/1/15	6/30/17	<b>Budapest CC</b>	G3DNW	4/24/14	5/21/17
	<b>PTJH</b>	<b>2/20/15</b>	<b>10/18/17</b>		ROF	9/15/15	9/14/17	<b>Cairo EMA</b>	MOTN	12/15/15	12/14/17
	WildAfri	2/1/16	6/30/17	<b>Baton Rouge LASM</b>	FOTB	9/1/15	8/31/17	<b>Calgary TS</b>	<b>Bugs</b>	<b>9/28/15</b>	<b>9/28/18</b>
<b>Athens Eug</b>	<b>AsterME</b>	<b>3/30/17</b>	<b>9/30/18</b>		L&C	11/3/15	11/2/18		SpaceNex	1/1/17	12/31/18
	MOTUW	4/13/16	4/10/17		NPA	11/1/16	10/31/17	<b>Carnival Vista</b>	NPA	4/14/16	5/4/17
<b>Atlanta FMNH</b>	<b>AmazAdve</b>	<b>5/20/17</b>	<b>11/19/17</b>	<b>Berlin CS</b>	G3DNW	4/20/14	10/19/17	<b>Cathedral City</b>	<b>PTJH</b>	<b>5/1/17</b>	<b>4/30/18</b>
	DinoAliv	8/15/16	8/14/17	<b>Birmingham AL</b>	DreamBig	2/17/17	2/16/18	<b>Chandigarh</b>	AIWC	9/5/14	9/5/17
	DreamBig	2/17/17	2/16/18		ExtrWeat	1/20/17	9/28/17		NPA	9/5/16	9/4/17
					NPA	5/20/16	5/19/17	<b>Chantilly</b>	DreamBig	2/17/17	2/16/20

Theater	Film	Open	Close	Theater	Film	Open	Close	Theater	Film	Open	Close
Charleston CCAS	FightPil	12/10/04		Detroit MSC	NPA	2/12/16	6/1/17	Hastings	Everest		6/30/17
	JTS	5/1/15	5/1/17		DreamBig	2/17/17	2/16/18		LivingSe	10/1/13	12/31/17
	LITAOA	5/1/15			ExtrWeat	5/22/17	5/21/18		D-Day	5/15/15	12/31/18
	MOTN	10/27/16	10/26/17	Dongguan STM	LastReef	4/1/16	4/1/17	Huntsville USSRC	EarthFli	2/1/17	1/31/18
Charlotte DP	NPA	10/27/16	7/1/17		NPA	1/25/17	1/24/18		ExtrWeat	10/19/16	10/14/17
	AmazAdve	5/1/17	4/30/18		Bugs	12/26/13	6/30/17		FOTB	3/17/13	6/30/17
	HumanBod	6/22/15	5/1/17	Edmonton TWS	DreamBig	3/25/17	3/24/18	Hong Kong SM	G3DNW	2/10/15	6/10/17
Chattanooga TA	MOC	11/19/16	4/30/17		FON	12/26/13	6/30/17		NPA	6/9/16	6/8/17
	AmazAdve	5/26/17	5/25/18		FOTB	12/26/13	6/30/17		PTJH	6/1/15	5/31/17
	DreamBig	2/17/17	2/16/18		GlobSoun	10/1/16	10/1/18	Houston MNS	SpaceNex	1/1/17	6/30/17
Chicago MSI	Jerusale	3/27/15	3/27/18	Erie	Jerusale	12/26/13	1/31/18		AmazAdve	4/21/17	12/31/17
	JTS	1/6/17	1/6/18		JMCSO	5/20/16	12/31/17		DinoAliv	12/15/15	6/30/17
	JTS	5/26/17	5/31/18		JMCSO	11/15/16	12/31/17		DreamBig	2/17/17	2/16/18
	WildAfri	11/16/16	11/30/17		JTM	12/26/13	6/30/17	Hutchinson	ExtrWeat	10/15/16	10/14/17
Cleveland	AmazAdve	5/26/17	5/25/18	Fort Lauderdale	LITAOA	6/12/15			FOTB	10/4/12	12/31/17
	DreamBig	2/17/17	2/16/18		MOC	1/27/17	1/31/18		G3DNW	6/6/16	5/31/17
	FOTB	2/28/14	6/30/17		WildAfri	10/28/16	10/31/17		NPA	2/12/16	5/31/17
	GWS	5/27/16	5/31/17	Fort Worth	D-Day	11/11/15	7/6/17	Indianapolis Imx	WildAfri	6/1/16	6/30/17
Columbus COSI	DreamBig	3/17/17	2/16/18		ExtrWeat	3/1/15	3/14/18		DreamBig	2/17/17	2/16/18
	FOTB	11/27/13	6/30/17		JTS	6/18/16	6/18/17		FightPil	7/1/13	
	IncrPred	4/14/17	4/30/18		WWDPP3D	9/15/16	9/30/17	Jersey City	RobotsNG	6/5/15	6/4/17
Columbus GA NIM	JTS	10/1/16	10/1/17	Galveston	AmazAdve	4/28/17	4/27/18		SpaceNex	3/1/16	8/31/17
	LastReef	7/1/16	6/30/17		DreamBig	2/17/17	2/16/18		D-Day	4/21/14	6/30/17
	TinyGian	10/1/16	10/31/17		Bugs	2/1/16	6/30/17		DreamBig	2/17/17	2/16/18
	Bugs	9/15/14	6/30/17	Garden City	D-Day	9/5/15	6/30/17	Kansas City Sci	ExtrWeat	10/24/16	10/14/17
Copenhagen TBP	DreamBig	2/17/17	2/16/18		DinoAliv	7/15/16	9/30/17		JTS	2/20/15	7/2/18
	FON	8/1/14	3/30/18		Dolphins	5/28/16	12/31/17		LastReef	10/5/12	9/30/17
	FOTB	9/1/14	6/30/17		DreamBig	2/17/17	2/16/18	Kaohsiung NSTM	RobotsNG	5/20/16	5/20/17
Corpus Christi Lex	Jerusale	2/11/15	12/12/17	Gatineau	FON	9/1/15	6/9/17		SpacJunk	10/31/14	10/31/17
	JTS	5/24/17	12/31/17		MOC	10/14/16	10/31/17		ExtrWeat	2/24/17	
	JTTSP	11/26/16	10/22/17		AmazAdve	5/27/17	1/30/18	Katoomba	HumpbWha	8/17/16	5/31/17
	MOC	4/1/17	3/31/18	Grand Canyon DCI	AMMM	3/4/17	5/26/17		DreamBig	2/17/17	8/16/18
Davenport Put	MOTUW	11/19/14	3/30/18		DinoAliv	1/1/17	1/1/17		ExtrWeat	10/15/16	10/14/17
	TinyGian	3/11/15	10/31/17		TinyGian	9/1/16	9/1/17	Kenner	JMCSO	2/17/17	7/31/17
	ACGOTS	5/26/17	6/17/18	Grand Rapids Cel	WildAfri	5/28/16	5/31/17		DreamBig	5/26/17	5/25/18
	Jerusale	10/18/13	2/7/18		AsterME	5/19/17	6/18/18	Kolkata SC	ExtrWeat	10/15/16	10/14/17
Denver MNS	L&C		2/7/18		JTS	7/1/16	7/1/17		NPA	5/31/16	5/30/17
	NPA	4/1/16	9/1/17	Hague	L&C		9/27/17		NPA	7/1/16	6/30/17
	SpaceNex	11/25/16	12/31/17		LITAOA	4/10/15		Kuwait SCK	WATE	6/1/97	
	FMTTM	1/1/16	12/31/17	Hampton VASC	MOTUW	9/2/14	9/1/17		G3DNW	6/18/14	9/19/17
Des Moines	HumpbWha	10/8/15	6/1/17		FlyMons	1/12/12	4/23/17	Las Palmas	FlyMons	6/4/16	6/3/17
	MOTUW	6/19/14	6/18/17		NPA	2/24/17	6/29/17		NPA	7/2/16	6/30/17
	NPA	2/12/16	6/1/17	Hartberg	D-Day	9/1/15	3/30/18		JTS	7/1/16	7/1/17
	SFLIS	2/9/17	2/9/18		FOTB	10/5/12	6/30/17	Lehi	G3DNW	6/18/14	9/19/17
Dearborn THF	WWDPP3D	12/1/16	5/31/17		GWS	10/7/16	6/30/18		JTS	2/27/15	
	ACGOTS	6/17/16		Harrisburg	LITAOA	4/18/16	4/17/17		MA	7/5/16	7/4/17
	FightPil	5/12/12			MOTUW	1/15/16	6/30/18	Lodz CC	Kurashiki	9/5/16	9/4/17
	Bugs	10/1/12	4/28/18		TinyGian	12/23/16	12/31/17		FlyMons	7/6/16	7/5/17
Detroit MSC	DinoAliv	2/1/15	6/30/17	Hartberg	WildAfri	6/24/16	6/30/17		HumpbWha	7/17/15	7/17/17
	DreamBig	2/24/17	2/23/18		GC	11/1/99	12/17	London BFI Ode	JMCSO	5/30/16	5/30/17
	DSC	2/6/15			GCA	4/22/16	4/21/17		WWDPP3D	5/30/16	5/30/17
	ExtrWeat	10/15/16	2/14/18	Hartberg	G3DNW	4/20/14	5/4/17	London SM	ExtrWeat	10/15/16	10/14/17
Dongguan STM	FON	5/18/16	5/17/17		JMCSO	4/15/16	4/14/17		JTS	1/1/16	6/30/17
	FOTB	2/15/13	6/30/17		Mummies	4/23/07	2/28/18		LastReef	6/24/16	6/30/17
	G3DNW	10/17/14	10/20/17	Hartberg	RobotsNG	4/1/17	3/31/18	Los Angeles CSC	MOC	9/1/16	8/31/17
Edmonton TWS	HumpbWha	6/1/16	6/1/17		WM	4/20/16	4/19/17		NPA	3/24/17	3/2/18
	L&C	4/26/17		Hartberg	Africa	10/11/16	10/11/17		WWDPP3D	9/26/14	9/30/17
	LastReef	7/1/15	6/30/17		FON	10/4/12	10/3/17	Louisville KSC	Bugs	8/24/15	8/24/18
Erie	LITAOA	7/1/16	9/30/17		HumanBod	1/11/11	12/31/17		G3DNW	6/18/14	9/19/17
	RobotsNG	11/1/15	10/31/17	Hampton VASC	HumpbWha	6/28/16	6/17/17	Lubbock SS	JTM		1/31/18
	SeaMonst	4/27/16	4/26/18		MOC	5/16/17	12/31/17		MOC	1/20/17	1/31/18
	WildOcea	2/1/15	6/30/17	Hartberg	MOTUW	10/1/15	12/17		MOTUW	8/1/14	7/31/17
Everest	DreamBig	5/26/17	5/25/18		NPA	2/16/16	6/1/17		RobotsNG	5/23/15	2/28/18
	FightPil	3/1/13		Hartberg	VanGogh	9/1/15	6/1/17	Louisville KSC	DreamBig	2/17/17	2/11/18
	Rescue	6/1/16	6/1/17		DreamBig	2/17/17	2/16/18		DreamBig	2/17/17	2/16/18
	DreamBig	2/17/17	2/16/18		FOTB	3/29/13	6/30/17		ExtrWeat	10/15/16	10/14/17
Gatineau	DSC	3/25/16	1/17/18	Hartberg	JTS	2/21/15	2/20/18	Lubbock SS	FON	6/18/15	7/2/18
	FOTB	2/8/17	12/31/17		LITAOA	4/10/15			FOTB	9/30/12	6/30/17
	MOTUW	3/25/16	1/17/18		NPA	4/29/16	4/28/17		G3DNW	6/18/15	6/30/18
	NPA	3/25/16	11/26/17	Hartberg	RobotsNG	6/20/15	6/19/18		Jerusale	1/20/14	7/2/18
Hartberg	RobotsNG	3/25/16	1/17/18		SFLIS	10/21/16	10/20/17	Lubbock SS	JTS	4/3/15	6/30/18
	DreamBig	2/17/17	2/16/18		NPA	1/1/17	12/31/17		L&C	7/1/16	7/2/17
	ExtrWeat	1/13/17			DreamBig	2/18/17	2/17/18		LastReef	2/8/14	6/30/17
	NPA	7/1/16	6/30/17	Hartberg	FON	10/15/15	1/12/17		NPA	2/12/16	6/1/17
Hartberg	WildAfri	9/23/16	9/30/17		FOTB	2/2/14	6/30/17	Lubbock SS	PTJH	7/4/14	7/2/17
	DreamBig	2/24/17	2/23/18		JTS	9/14/15	6/30/17		ExtrWeat	3/4/17	2/23/18
	ExtrWeat	10/15/16	10/14/17		L&C	11/7/16	1/13/17		JTTSP	11/25/16	5/26/17
	GlobSoun	10/1/16	10/1/18		NPA	7/1/16	6/30/17		NPA	5/20/16	5/19/17
Hartberg				Hartberg	CRA	3/25/15	6/1/17		SFLIS	10/7/16	10/6/17
								Hartberg			

Theater	Film	Open	Close	Theater	Film	Open	Close	Theater	Film	Open	Close
Lucerne	HumpbWha	10/6/16	10/5/17	Philadelphia FI	ExtrWeat	2/11/17	10/14/17	San Antonio San	NPA	7/25/16	7/25/17
	JTS	11/26/16	11/26/17		FlyMons	11/25/16		San Diego NHM	G3DNW	5/1/17	1/30/18
	NPA	3/17/16	9/17/17		G3DNW	9/6/16	9/5/17		WildAfri	9/7/16	9/30/17
Lucknow	NPA	2/6/17	8/5/17		GlobSoun	10/1/16	10/1/17	San Diego RHF	Bugs	7/1/14	6/30/17
Matsusaka	Penguins	1/14/17	4/16/17		MOTUW	7/1/14	4/30/17		DreamBig	3/10/17	3/9/18
McMinnville	ExtrWeat	10/27/16	10/26/17		RobotsNG	10/1/16			ExtrWeat	11/11/15	10/14/17
	FightPil	3/23/12		Phoenix ASC	DreamBig	2/17/17	2/16/18		FOTB	10/12/12	9/30/17
	Jerusale	9/27/13	2/28/18		FOTB	10/7/16	3/1/18		L&C		9/30/17
	LOF	3/23/12			GWS	9/15/16	9/30/17		NPA	3/18/16	6/1/17
	Rescue	6/1/12			JTS	10/1/16	10/1/17		SeaMonst	2/2/17	9/4/17
Melbourne MV	AMMM	7/11/16			RobotsNG	9/17/16		San Jose Tech	AmazAdve	5/6/17	5/5/18
	FON	9/1/15	8/31/17	Pittsburgh CSC	DreamBig	2/17/17	2/16/18		DreamBig	2/17/17	2/16/18
	G3DNW	4/11/16	4/10/18		ExtrWeat	10/15/16	10/14/17		ExtrWeat	10/15/16	10/14/17
	LITAOA	2/8/17	6/30/17		FON	1/1/16	12/31/17		FOTB	2/9/13	6/30/17
	MA	1/1/17	1/1/18		FOTB	3/15/13	7/3/17		JTS	4/30/16	6/30/17
	SFLIS	3/16/17	3/22/18		SeaMonst	7/1/16	12/31/17		L&C	6/8/16	6/20/17
Memphis Pink	ACGOTS	5/7/16	6/22/18	Poitiers Imax	TinyGian	4/1/16	4/30/17		MOTUW	8/30/14	6/20/17
	ExtrWeat	3/24/17	5/28/18	Poitiers Solido	JMCSO	2/1/16	12/31/17		NPA	2/12/16	6/1/17
	FOTB	3/1/14	5/27/17	Port of Spain	JMCSO	2/7/17	2/7/18		RobotsNG	10/3/15	10/2/17
	JMCSO	6/25/16	6/23/17	Portland OMSI ET	DreamBig	2/17/17	2/16/18	San Simeon DCI	HCBTD	8/17/96	
	JTS	1/9/16	5/29/17		DSC	1/16/15	6/4/17	Seattle PSC 1	GlobSoun	10/1/16	10/1/17
	NPA	3/5/16	6/1/17		L&C	7/21/15	7/20/17		TinyGian	9/12/15	9/12/17
	WildAfri	1/7/17	5/28/17		NPA	2/12/16	6/1/17	Seattle PSC 2	D-Day	3/29/14	6/30/19
Mexicali	DinoAliv	11/5/16	9/30/17	Poznan CC	G3DNW	6/18/14	9/19/17		DreamBig	2/17/17	2/16/18
	WildOcea	5/17/17	10/30/17	Prague CC	G3DNW	5/22/14	5/21/17		G3DNW	11/20/15	4/30/17
Mexico City Pap	DreamBig	3/15/17	3/14/18	Puebla PDP	Sharks3D	4/1/16	4/1/17		TTA	1/20/17	12/31/17
Mexico City PAP	HumpbWha	11/16/16	11/15/17	Quebec Cpx	NPA	6/24/16	6/23/17	Shanghai 3D STM	JMCSO	12/31/16	12/31/17
Milwaukee	ExtrWeat	10/15/16	10/14/17	Raleigh	DreamBig	2/17/17	2/16/18		NPA	12/1/16	12/17/17
	MOTUW	10/1/14	7/30/17		ExtrWeat	10/17/16	10/14/17	Shenyang LSTM	JMCSO	11/1/16	11/1/17
	NPA	9/17/16	9/16/17		FON	2/1/12	9/17	Shijiazhuang HST	Alaska	1/1/17	1/1/19
	PTJH	6/13/14	6/30/17		Jerusale	2/21/14	2/28/18	Shreveport	NPA	2/12/16	6/1/17
	RobotsNG	5/1/16	6/30/17		L&C	1/1/15	12/31/17	Singapore SC	MOTUW	6/13/16	12/31/17
	WWDPP3D	2/1/16	6/30/17		MOTUW	11/1/15	10/31/17		RobotsNG	5/1/17	4/30/18
Mobile	DinoAliv	9/24/16	4/14/17		NPA	2/27/16	6/1/17	Sinsheim	NPA	3/4/16	6/1/17
	GWS	5/28/16	5/30/17	Regina	DreamBig	2/17/17	2/16/18	Sioux Falls	AOTE	4/1/16	6/30/17
	Mummies	5/28/16	5/30/17		ExtrWeat	10/15/16	10/14/17		ExtrWeat	2/1/17	2/3/18
	WildAfri	1/20/17	5/28/17	Richmond SMV	DreamBig	2/18/17	2/17/18		IncrPred	12/22/16	6/30/18
Monterrey Pap	JTTS	12/10/16	4/10/17		FOTB	5/1/13	6/30/18		JTS	8/19/16	8/19/17
Montreal SC	HumpbWha	9/23/16	6/16/17		GCA	6/1/16	6/1/17		LastReef	1/30/15	6/30/17
	NPA	2/20/17	2/19/18		HumpbWha	3/14/15	6/1/17		NPA	8/13/16	8/12/17
Moscow Kin	G3DNW	10/6/14	8/31/17		NPA	4/10/16	4/9/17		RobotsNG	3/4/16	
	LastReef	6/1/16	10/31/17		SeaMonst	6/20/14	8/31/17	Speyer Dome	Dolphins		12/31/17
	TTA	1/11/16	12/31/17		WildAfri	2/1/17			JTTS	5/25/17	5/24/18
Nanchang JTSC	JIAC	11/10/16	11/10/17	Rochester MSC	ToFly	7/1/16	6/30/18		MOF		12/31/17
New Delhi ICC	ND			Sacramento Imx	ExtrWeat	2/24/17		Stockholm	HumanBod	1/1/12	12/31/17
New Orleans	GWS	12/26/16	12/31/17		FOTB	8/13/13	6/30/17		JTTS		9/30/17
	HOTB		12/31/17		GWS	2/20/15	6/30/17		MOTUW	9/18/15	9/1/17
	HumpbWha	3/3/17	9/3/17		HumpbWha	8/19/16	5/30/17		WildAfri	6/1/16	6/30/17
New York AMNH	Niagara	7/1/86			L&C	7/1/15	12/31/17	Sudbury	D-Day	5/30/16	6/1/17
Niagara Can DCI	Niagara	5/1/07			LastReef	5/20/16	6/30/17		DreamBig	2/17/17	2/16/18
Niagara NY DCI	DreamBig	2/17/17	2/16/18	Saint Augustine	AmazAdve	4/28/17	4/30/18		ExtrWeat	10/15/16	10/14/17
Norwalk MA	NPA	5/27/16	5/10/17		DreamBig	2/17/17	2/16/18		JMCSO	3/11/17	9/10/17
	HumpbWha		6/1/17		ExtrWeat	10/15/16	1/1/18		NPA	2/12/16	6/30/17
Nuremberg	NPA	3/3/16	6/1/17		FOTB	1/18/13	12/31/17		TinyGian	6/4/16	5/31/17
	NPA	2/12/16	6/1/17		G3DNW	4/1/15	4/30/17	Syracuse MOST	Amazon	4/1/16	5/31/17
Omaha Zoo	DreamBig	2/17/17	8/16/18		Gruffalo	1/1/15	12/31/17		Dolphins	4/1/16	5/31/17
Orlando SC	ExtrWeat	10/15/16	10/14/17		GruffChi	2/1/15	12/31/17		Dragons	7/2/16	7/1/17
	FOTB	3/1/14	6/30/17		L&C		6/30/17		FOTB	7/4/15	7/3/17
	G3DNW	7/5/14	1/4/18		RobotsNG	8/1/16	7/30/17		JTS	10/1/16	4/1/17
	HumpbWha	10/28/16	10/27/17		ROTB	10/3/15	12/31/17	Taichung NMNS	JTS	7/1/16	6/30/17
	TinyGian	8/6/16	8/31/17		WWDPP3D	1/9/17	1/31/18	Taipei AM	JTS	7/1/16	7/1/17
	WOTA	7/1/16	6/30/17	Saint Félicien	TinyGian	5/1/16	5/1/17	Tallahassee CLC	AmazAdve	4/28/17	10/27/17
	WWDPP3D	4/1/17	3/31/18	Saint Louis SC	DreamBig	2/17/17	2/16/18		DreamBig	2/17/17	2/16/18
Paris Geo	HumpbWha	7/7/15	6/1/17		L&C	8/1/15	7/30/17		FOTB	1/18/13	6/30/17
	NPA	4/3/17	12/31/17		MOC	10/1/16	10/1/17		HidUniv		6/1/17
	TTA	10/6/15	6/1/17		Mummies	5/27/17	1/7/18		HumpbWha	2/20/15	6/1/17
Parker	NPA	1/27/17	7/28/17		RobotsNG	6/5/15			LastReef	1/17/14	6/30/17
Penrith	NPA	3/27/17	9/3/17	Saint Paul SMM	Everest	3/3/17	5/4/17		NPA	2/19/16	6/1/17
	SFLIS	1/1/17	4/30/17		FOTB	7/1/16	6/30/17		RobotsNG	10/16/15	10/14/17
Pensacola NAM	DreamBig	3/1/17	6/30/18		JTTS	5/5/17	6/1/18		WildAfri	5/15/16	5/31/17
	MOF	11/8/96			MOTN	3/3/17	5/4/17	Tampa MOSI	DinoAliv	1/30/16	6/30/17
	NPA	9/5/16	9/4/17		TTA	3/3/17	5/4/17		GWS	1/1/16	6/30/18
	RobotsNG	4/15/17		Salt Lake City Clark	AmazAdve	4/14/17	4/13/18		NPA	2/12/16	6/1/17
Peoria RM	DreamBig	2/18/17	2/17/18		BeauPlan	4/29/16	12/31/17		RobotsNG	10/5/16	10/4/17
	DSC	11/17/16	11/16/17		ExtrWeat	10/24/16	10/23/17		WildAfri	12/1/16	11/30/17
	ExtrWeat	10/15/16	10/14/17		FOTB	2/8/13	8/6/17	Thessaloniki	Dragons	10/1/16	9/30/17
	FOTB	4/1/16	8/26/17		IncrPred	2/17/17	2/17/18	Tijuana	Dolphins	5/1/17	5/31/17
	JTS	6/11/16	12/31/17		JTS	5/15/15	5/31/17		HumpbWha	7/15/16	7/14/17
	MOTUW	1/17/15	3/30/18		NPA	2/12/16	8/31/17		JTS	4/1/16	4/1/17
	NPA	8/27/16	8/26/17		VOT	10/21/16	6/30/17		MOC	5/15/17	10/15/17



Theater	Film	Open	Close	Theater	Film	Open	Close	Theater	Film	Open	Close
Toronto OSC	MOTN	4/1/17	4/30/17	Vantaa Victoria DCI	DreamBig	3/4/17	2/16/18	Virginia Beach AMSC	WWDPP3D	5/1/17	4/30/18
	VanGogh	3/24/17	3/23/18		FOTB	6/16/13	6/30/17		AmazAdve	5/27/17	10/26/17
	WildAfri	10/1/16	10/1/17		GlobSoun	10/1/16	10/1/18		ExtrWeat	10/15/16	10/14/17
	DreamBig	2/17/17	8/16/18		HumanBod	7/1/16	6/30/18		G3DNW	5/28/16	10/27/17
	HumanBod	1/1/15	12/31/17		NPA	2/12/16	6/30/17	Warsaw CC Washington NASM	G3DNW	6/18/14	9/19/17
Toyohashi Valencia Spn	NPA	7/1/16	6/30/17		TOTIA	6/1/16	6/30/17		AmazAdve	4/21/17	12/31/17
	G3DNW	3/1/17	6/30/17		WOTA	1/1/17	1/31/18		DreamBig	2/17/17	2/16/20
	FOTB	7/1/15	6/30/17		FOTB	5/9/17	1/15/18		JTS	3/6/15	
	HidUniv		6/1/17		AmazAdve	4/14/07	10/15/17		LITAOA	4/10/15	
	JMCOS	4/1/17	3/31/18		DreamBig	3/17/17	3/16/18	Washington NMNH	ToFly	3/7/16	12/31/17
Vancouver TWS	MOTUW	7/1/14	6/17		DSC	2/3/17	3/2/18		AmazAdve	4/21/17	12/31/17
	NPA	10/7/16	10/6/17		ExtrWeat	10/28/16	10/14/17		NPA	2/12/16	2/11/18
	SeaMonst	7/1/16	12/31/17		FOTB	4/5/13	6/30/17	Yellowstone	ExtrWeat	1/23/17	10/14/17
	WWDPP3D	7/1/16	7/31/17		G3DNW	9/4/15	6/30/18		NPA	5/1/16	4/30/17
	Bugs	3/11/06	6/30/18		RobotsNG	2/3/17			Yell	5/1/14	12/31/17
	D-Day	11/7/15	11/12/17		TinyGian	12/2/16	12/2/17				

## Key to Film Abbreviations

Film	Title	Year	Dist	Film	Title	Year	Dist
ACGOTS	Aircraft Carrier: Guardian of the Seas	2016	3D	K2	ND	2005	unk
Africa	Africa: the Serengeti	1994		K2	Niagara	1987	K2
AIWC	Adventures in Wild California	2000		MFF	NPA	2016	3D MFF
Alaska	Alaska: Spirit of the Wild	1997		K2	Ozarks	1993	IMAX
AmazAdve	Amazon Adventure	2017	3D	SKF	Penguins	2013	3D nWP
Amazon	Amazon	1997		MFF	PTJH	2014	3D NGD
AMMM	Amazing Mighty Micro Monsters 3D	2016	3D	SER	Rescue	2011	3D K2
AOTE	Antarctica 3D: On the Edge	2014	3D	GSF	RobotsNG	2015	3D NGD
AsterME	Asteroid: Mission Extreme	2016	3D	NGD	ROF	1991	MFF
BeauPlan	Beautiful Planet, A	2016	3D	IMAX	ROTB	2015	3D B&D
Bugs	Bugs!	2003	3D	SKF	SeaMonst	2007	NGD
CRA	Coral Reef Adventure	2003		MFF	SFLIS	2016	3D MFF
D-Day	D-Day: Normandy 1944	2014	3D	K2	Sharks3D	2004	3D 3DED
DinoAliv	Dinosaurs Alive	2007	3D	GSF	SpaceNex	2015	3D B&D
Dolphins	Dolphins	2000		MFF	SpacJunk	2012	3D K2
Dragons	Dragons: Real Myths and Unreal Creatures	2013	3D	B&D	TinyGian	2014	3D GSF
DreamBig	Dream Big: Engineering Wonders of the World	2017	3D	MFF	ToFly	1976	MFF
DSC	Deepsea Challenge 3D	2015	3D	NGD	TOTIA	2013	3D GSF
EarthFli	Earthflight	2017	3D	GSF	TTA	2012	3D IMAX
Everest	Everest	1998		MFF	VanGogh	2009	MFF
ExtrWeat	Extreme Weather	2016	3D	NGD	VOT	2016	IMAX
FightPil	Fighter Pilot: Operation Red Flag	2004	3D	K2	WATE	1997	NGD
FlyMons	Flying Monsters 3D	2011	3D	NGD	WildAfri	2015	3D GSF
FMTTM	Fly Me to the Moon	2008	3D	nWP	WildOcea	2008	3D GSF
FON	Forces of Nature	2004		NGD	WM	2013	3D B&D
FOTB	Flight of the Butterflies	2012	3D	SKF	WOTA	2014	3D GSF
G3DNW	Galapagos 3D: Nature's Wonderland	2014	3D	nWP	WWDPP3D	2014	3D GSF
GC	Grand Canyon: The Hidden Secrets	1985		K2	Yell	1994	GSF
GCA	Grand Canyon Adventure: River at Risk 3D	2008	3D	MFF			
GlobSoun	Global Soundscapes: Mission to Record the Earth	2016	3D	FIC			
Greece	Greece: Secrets of the Past	2006		MFF			
Gruffalo	Gruffalo, The	2014	3D	B&D			
GruffChi	Gruffalo's Child	2015	3D	B&D			
GWS	Great White Shark	2013	3D	GSF			
HCBTD	Hearst Castle: Building the Dream	1996		K2			
HidUniv	Hidden Universe	2013	3D	MFF			
HOTB	Hurricane on the Bayou	2006		MFF			
HumanBod	Human Body, The	2001		NGD			
HumpbWha	Humpback Whales	2015	3D	MFF			
IncrPred	Incredible Predators	2016	3D	GSF			
Jerusale	Jerusalem	2013	3D	NGD			
JIAC	Journey into Amazing Caves	2001		MFF			
JMCOS	Jean-Michel Cousteau's Secret Ocean	2015	3D	3DED			
JTM	Journey to Mecca	2009		SKF			
JTS	Journey to Space	2015	3D	K2			
JTTSP	Journey to the South Pacific	2013	3D	MFF			
L&C	Lewis & Clark: Great Journey West	2002		NGD			
LastReef	Last Reef, The	2012	3D	GSF			
LITAOA	Living in the Age of Airplanes	2015		NGD			
LivingSe	Living Sea, The	1995		MFF			
LOF	Legends of Flight	2010	3D	K2			
MA	Museum Alive 3D	2016	3D	SER			
MOC	Mysteries of China	2016	3D	GSF			
MOF	Magic of Flight, The	1997		MFF			
MOTN	Mystery of the Nile	2005		MFF			
MOTUW	Mysteries of the Unseen World	2013	3D	NGD			
Mummies	Mummies: Secrets of the Pharaohs	2007		GSF			

### April-May 2017 Bookings Count

#	Film	#	Film	#	Film	#	Film
60	NPA	6	JTTSP	2	MA	1	LivingSe
48	DreamBig	5	SFLIS	2	MOF	1	LOF
36	ExtrWeat	5	DSC	2	Niagara	1	ND
32	FOTB	5	FightPil	2	Penguins	1	Ozarks
30	JTS	5	GlobSoun	2	Rescue	1	ROF
27	G3DNW	5	HumanBod	2	ToFly	1	ROTB
19	RobotsNG	5	PTJH	2	VanGogh	1	Sharks3D
18	HumpbWha	5	SeaMonst	2	WildOcea	1	SpacJunk
17	AmazAdve	4	ACGOTS	2	WOTA	1	TOTIA
17	WildAfri	4	Dolphins	1	Africa	1	VOT
16	MOTUW	4	FlyMons	1	AIWC	1	WATE
14	L&C	4	IncrPred	1	Alaska	1	WM
13	JMCOS	4	MOTN	1	Amazon	1	Yell
13	TinyGian	4	SpaceNex	1	AOTE		
12	FON	4	TTA	1	BeauPlan		
10	GWS	3	Everest	1	CRA		
10	LastReef	3	Mummies	1	EarthFli		
10	MOC	2	AMMM	1	FMTTM		
10	WWDPP3D	2	AsterME	1	GC		
8	Bugs	2	Dragons	1	Greece		
8	D-Day	2	GCA	1	Gruffalo		
8	DinoAliv	2	HidUniv	1	GruffChi		
8	LITAOA	2	JIAC	1	HCBTD		
7	Jerusale	2	JTM	1	HOTB		

# Directory of Organizations Mentioned in this Issue of LF Examiner

Distributors' abbreviations are listed in **bold**.

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Washington Blvd. Culver City, CA 90232 USA www.sonypictures.com/</p>	<p>Cosmic Picture 6000 3E Avenue Montreal, QC H1Y 2X3 CANADA Tel: 514-279-0046</p> <p>D3D Cinema 990 Grove St., Suite 200 Evanston, IL 60201 USA Tel: 847-475-9140 Fax: 847-475-9145 www.d3dcinema.com/</p> <p>December Media Level 1, 462 City Rd South Melbourne, Victoria 3205 AUSTRALIA Tel: +61-3-9699 8911 Fax: +61-3-9699-8611 www.decembermedia.com.au</p> <p>Digital Crossing Productions 14 Jerome Street Toronto, ON M6P 1H7 CANADA http://digitalcrossing.ca/</p> <p>Entergy Giant Screen Theatre 1 Canal Street New Orleans, LA 70130 USA Tel: 504-565-3033 Fax: 504-565-3010 www.auduboninstitute.org</p> <p>Frank Theatres CineBowl &amp; Grille &amp; IMAX 1614 South Main Street Blacksburg, VA 24060-5824 USA</p> <p>GDC Technology of America 1016 West Magnolia Boulevard Burbank, CA 91506 USA Tel: 818 972 4370 Fax: 877 643 2872 www.gdc-tech.com</p> <p>Giant Screen Cinema Association 624 Holly Springs Road Suite 243 Holly Springs, NC 27540 USA Tel: 919-346-1123 www.giantscreencinema.com</p>	<p>Giant Screen Films <b>GSF</b> 990 Grove St., Suite 200 Evanston, IL 60201 USA Tel: 847-475-9140 Fax: 847-475-9145 www.gsfilms.com</p> <p>Golden Gate 3D 300 California Avenue Building Two, Treasure Island San Francisco, CA 94130 USA Tel: 415-779-4433 http://gg3d.com/</p> <p>Happy Planet Productions 7058 Bianca Ave. Lake Balboa, CA USA Tel: 818-207-3037 http://happyplanetproductions.org</p> <p>Houston Museum of Natural Science 5555 Hermann Park Drive Houston, TX 77030-1799 USA Tel: 713-639-4600 Fax: 713-523-4125 www.hmns.org</p> <p>Imax Corporation <b>IMAX</b> 2525 Speakman Drive Mississauga, ON L5K 1B1 CANADA Tel: 905-403-6500 Fax: 905-403-6450 www.imax.com</p> <p>IMAX Victoria In the Royal BC Museum 675 Belleville Street Victoria, BC V8W 1A1 CANADA Tel: 250-953-4629 Fax: 250-480-4830 www.imaxvictoria.com</p> <p>Indiana State Museum 650 W. Washington St. Indianapolis, IN 46204 USA Tel: 317-233-4629 Fax: 317-233-2438 www.inwhiteriver.com</p> <p>K2 Communications <b>K2</b> 880 Apollo Street, Suite 239 El Segundo, CA 90245 USA Tel: 310-524-9100 Fax: 310-524-1540 www.k2communications.com/</p>	<p>Kansas Cosmosphere and Space Center 1100 North Plum Hutchinson, KS 67501-1499 USA Tel: 620-662-2305 Fax: 620-662-3693 www.cosmo.org</p> <p>Lightstorm Entertainment 919 Santa Monica Boulevard Santa Monica, CA 90401 USA Tel: 310-656-6100</p> <p>Lionsgate <b>LG</b> 2700 Colorado Ave., Suite 200 Santa Monica, CA 90404 USA Tel: 310-255-3700 Fax: 310-255-3870 www.lionsgate.com</p> <p>Lootch Krasnoyarsk, RUSSIA</p> <p>LucasFilm Ltd. 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Lake Shore Drive Chicago, IL 60637 USA Tel: 773-684-1414 Fax: 773-684-5678 www.msichicago.org</p> <p>N3D Land Films 10 place du theatre Sevres, 92310 FRANCE Tel: + 33-6 88 88 87 78 www.n3dland.com/</p> <p>National Air and Space Museum 6th &amp; Independence Ave. SW Washington, DC 20560 USA Tel: 202-357-1675 Fax: 202-357-1652 www.nasm.si.edu/</p> <p>National Association of Theatre Owners 4605 Lankershim Blvd, Suite 340 North Hollywood, CA 91602 USA Tel: 818-506-1778 www.natoonline.org</p>	<p>National Geographic Cinema Ventures <b>NGD</b> 485 Lexington Avenue, 3rd Floor New York, NY 10017 USA Tel: 212-656-0724 Fax: 212-656-0701 http://mov-ies.nationalgeographic.com/movies/</p> <p>National Museum of Natural History 10th and Constitution Ave. NW Washington, DC 20560 USA www.mnh.si.edu</p> <p>Navy Pier IMAX at AMC 600 E. Grand Ave. Chicago, IL 60611 USA Tel: 312-595-0090 www.imax.com/chicago/</p> <p>NEC Display Solutions of America 500 Park Blvd. Suite 1100 Itasca, IL 60143 USA Tel: 630-467-3000 Fax: 630-467-3010 www.necdisplay.com/category/digital-cinema-projectors</p> <p>New England Aquarium Central Wharf Boston, MA 02110 USA Tel: 617-973-5200 www.neaq.org</p> <p>Newport on the Levee One Levee Way, Ste 1113 Newport, KY 41071 USA Tel: 859-291-0550 www.newportonthelevee.com</p> <p>No Final Frontier Productions, LLC Fairfax, VA USA www.lightsspeedpioneers.com/</p> <p>Oceanic Research Group PO Box 94 North Reading, MA 01864 USA Tel: 978-664-9091 www.oceanicresearch.org</p>
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Tel: +44-1635-569302  
www.odeonanducicinasgroup.com

Omnijoi Media Company, CHINA  
www.omnijoi.com/english.html

Omniversum  
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Hague, 2500 GH NETHERLANDS  
Tel: +31 70 307 3456  
Fax: +31 70 307 3450  
www.omniversum.nl

Paramount Pictures Corporation **PPC**  
5555 Melrose Avenue  
Hollywood, CA 90038-3197  
USA  
Tel: 323-956-5000  
www.paramount.com

Peoria Riverfront Museum  
222 SW Washington Street  
Peoria, IL 61602 USA  
Tel: 309-686-7000  
www.peoriariverfrontmuseum.org/

Pulseworks  
5100 Highlands Parkway SE  
Atlanta, GA 30082 USA  
Tel: 770-916-1722  
Fax: 770-916-1933  
www.pulseworks.com

PVR Cinemas  
Block A, 4th Floor, Building No.9  
DLF Cyber City, phase III  
Gurgaon, 122002 INDIA  
www.pvrcinemas.com

Ring of Fire Films, Inc.  
568 E Iverson Beach Rd  
Camano Island, WA 98282  
USA  
Tel: 360-387-8222  
www.globalnetproductions.com/

Saint Thomas Productions  
Village d'Entreprises Saint Henri  
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Tel: +33 4 95 068 068  
www.saint-thomas.net/

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Fax: 973-601-6001  
www.samsung.com

Science Center of Iowa  
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Des Moines, IA 50309 USA  
Tel: 515-274-4138  
Fax: 515-274-3404  
www.sciowa.org

Science Spectrum  
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Fax: 806-745-1115  
www.sciencespectrum.org

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CANADA  
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www.skfilms.ca

Smithsonian Institution  
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USA  
www.si.edu

Sony Electronics, Inc.  
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Culver City, CA 90232 USA

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USA  
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Stephen Low Company  
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Fax: 514-633-6035  
www.stephenlow.com

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Greensboro, NC 27410  
USA  
Tel: 336-202-4777  
www.sv2studios.com/

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https://tandemstock.com

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www.foxmovies.com

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www.universalstudios.com

USS Lexington Museum  
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Corpus Christi, TX 78403  
USA  
Tel: 361-888-4873  
www.ussexington.com/

Vox Cinemas  
Dubai, UAE  
http://uae.voxcinemas.com/

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www.washingtonpavilion.org

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www.wildpacificmedia.com/

## Classified Ads

### Positions Open

**IMAX Film Projectionists**  
**IMAX Corporation** is currently seeking experienced IMAX Film Projectionists for a temporary assignment (up to 8 weeks) from 7/17/17-8/31/17. We are seeking to fill positions in numerous locations throughout the United States and Canada. If you have interest please apply via the IMAX Career Page:  
careers.imax.com

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# SHORTS

## Amazon Adventure opens

In April, SK Films' *Amazon Adventure* opened in 20 theaters in the U.S. and Canada, following its world premiere at the Smithsonian's National Museum of Natural History in Washington, DC, on April 18.

The film, directed by Mike Slee, looks at the ground-breaking work of 19<sup>th</sup>-century naturalist Henry Walter Bates, which provided "the beautiful proof" of Darwin's then-controversial theory of natural selection. During an 11-year journey in the Amazon, Bates discovered the phenomenon of animal mimicry — looking like another creature — which conveys evolutionary advantages.

The film stars Calum Finlay as Bates and was produced by Jonathan Barker and Sean B. Carroll and is distributed by SK Films.

## 40-min Carrier opens in May

The 40-minute version of Stephen Low's *Aircraft Carrier* has its world premiere at the Smithsonian's National Air and Space Museum in Washington, DC, on May 24, and opens in other theaters later in the month. The extended version uses new CGI footage that reveals "the engineering marvels underneath the hulls of these carriers and takes audiences on a POV ride through the skies," according to a press release.

The original 24-minute version, titled *Aircraft Carrier: Guardian of the Seas*, opened in June 2016. Both versions are distributed by Giant Screen Films and K2 Communications.

## Imax seeks film projectionists

Imax Corporation has posted ads seeking 15/70 film projectionists for temporary eight-week assignments this summer to support screenings of Christopher Nolan's *Dunkirk*, opening on July 19. About 50 positions are open around the U.S. and Canada. (See ad on page 23.)

The film, about the rescue of hundreds of thousands of British soldiers from the French seaside town in World War II, is the fifth feature Nolan has filmed with 15/65 cameras and released in 15/70 film

editions. Nolan has said in interviews that he shot "most of the film" on 15/65, including quite a bit of hand-held footage, intended to give audiences the sense of being there with the imperiled soldiers on the beach and in the flotilla of small boats that rescued them.

Starting with *The Dark Knight* in 2008, Nolan has shot increasingly larger portions of his movies on 15/65 film. In IMAX film theaters, the image expands to fill the full height of the tall screens during the scenes shot on 15/65. The rest,



The IMAX theater at Kentucky's Newport on the Levee closed in 2003.

captured on 35mm or 5/65 film, has the standard wide aspect ratios of most movies.

Some 94 15/70 prints of *The Dark Knight* were released in the summer of 2008, just as the first IMAX digital projectors were being installed. Four years later, the sequel, *The Dark Knight Rises*, got 103 15/70 bookings. But as more theaters converted to digital, Nolan could not secure as many film bookings as he had before. By the time *Interstellar* opened in late 2014, many multiplexes had replaced their 15/70 film projectors with IMAX digital; it ran in only 56 GS film theaters, and many of them had problems keeping their projectors up and running after several years of inactivity.

The most recent 15/70 releases of DMR films, the last two *Star Wars* titles, only ran in about 15 film theaters, almost all of which were institutional, not multiplexes.

Although neither Imax nor Warner Bros. have announced how many 15/70 prints of *Dunkirk* will be struck, the 50 job openings suggest that it could get 40 or more bookings, assuming that at least two projectionists are needed at each reactivated location and that 10-20 institutional theaters might run it as well.

## Ex-IMAX may host orchestra

The former IMAX theater at Newport on the Levee in Newport, KY, is being considered as the new home for the Kentucky Symphony Orchestra. The 458-seat theater, which only operated from 2001 to 2003, has been vacant for the past 14 years, but ever since orchestra director J.R. Cassidy toured the building last year he has been working to turn it into a 600-seat concert hall. He told cincinnati.com "My eyes really lit up when I saw what the size of the stage could be. Every seat here is a great seat."

Cassidy held a fundraiser in the theater in late April, hoping to raise the estimated \$6 million needed for the renovation. The price is substantially less than building a new concert hall from scratch would cost.

## Virginia IMAX closes then reopens

The Cinebowl and Grille in Blacksburg, VA, which houses a restaurant, a bowling alley, and a multiplex with an IMAX theater, was closed suddenly in late April by the owners of the shopping center in which it was located. AFP Partners, the owners of the First & Main shopping center, claimed that Florida-based Frank Theatres owed \$450,000 in rent, dating back to November 2016.

Employees and customers of the theater had no warning of the closure, arriving to find the theater chained shut. However, within a few days, a judge ordered that Frank Theatres could re-occupy the location on payment of an \$80,000 bond while legal action continued, saying that

(see SHORTS on page 15)